SACRAMENTO RIVER VALLEY ELDERBERRY LONGHORN BEETLE (VELB) CONSERVATION BANK

Initial Study/Proposed Mitigated Negative Declaration

Prepared for
County of Colusa
Community Development Department

June 2024

ESA

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SACRAMENTO RIVER VALLEY ELDERBERRY LONGHORN BEETLE (VELB) CONSERVATION BANK

Proposed Mitigated Negative Declaration

Project Title: Sacramento River VELB Conservation Bank

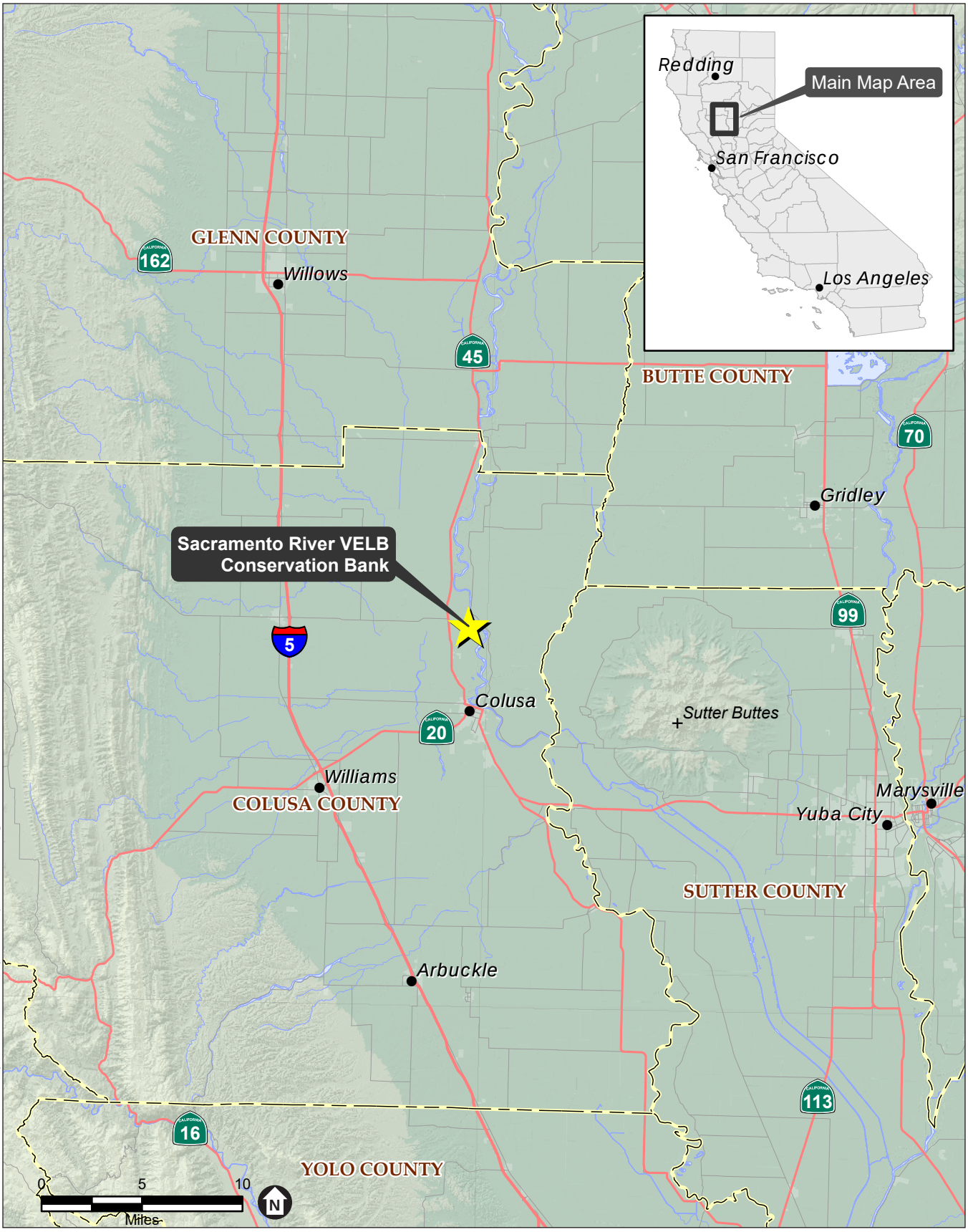
Lead Agency: County of Colusa Community Development Department

Project Location: The subject property is located at 4075 River Road in Colusa County, approximately 3.5 miles north of the City of Colusa. It is located just west of River Road and is bound by the Sacramento River to the west and south (Section 31 of Township 17 North, Range 1 West, Mount Diablo Base and Meridian, within the Moulton Weir U.S. Geological Survey [USGS] 7.5-minute quadrangle). The approximately 13.3-acre project site located at the north end of the subject property is identified as Assessor's Parcel Number (APN) as 012-270-058 (as seen in **Figure MND-1**) and is a subset of a larger property (approximately 258 acres) owned by Westervelt Ecological Services, LLC (WES) which consists of APNs 012-270-043, 012-270-058, and 015-030-001.

Project Description: The proposed project would provide habitat for the federally listed Valley elderberry longhorn beetle (VELB; *Desmocerus californicus dimorphus*) within a 13.3-acre project site. The proposed project would provide 329 compensatory mitigation credits for unavoidable impacts to VELB by developing suitable habitat that would be protected and maintained in perpetuity.

The proposed project would be designed to provide suitable habitat for VELB with a shrub-dominated riparian habitat. The proposed project would be designed to be consistent with the *Conservation Guidelines for the Valley Elderberry Longhorn Beetle* (USFWS 1999); however, the design treats the site holistically and is intended to mimic a natural system.

All site preparation would be conducted using traditional agricultural methods and equipment by WES staff and the onsite farmer. Minimal disking would occur to prepare the site and planting would occur by hand. During irrigation installation there may be the need for some light trenching, up to 12 inches in depth, maximum.



SOURCE: Westervelt Ecological Services

SRVB Project

Figure MND-1
Regional Vicinity

ESA

The created VELB habitat would be irrigated to help establish the plantings. The main irrigation system that is currently in place on the property would be used to drip irrigate the elderberry and native plantings. The water source would be the existing agricultural well on site. The VELB habitat would only be irrigated long enough to establish the plants. Irrigation of the plantings would taper and ultimately be discontinued within five years after planting. Habitat monitoring to document the achievements of performance standards would begin immediately.

Findings: An Initial Study/proposed Mitigated Negative Declaration (IS/MND) has been prepared to assess the proposed project's potential effects on the physical environment and the significance of those effects. Based on the analysis conducted in the IS, it is determined that implementing the proposed project would clearly not have any significant adverse effects on the environment with incorporation of the best management practices (BMPs) in the project description that would be implemented with the contract specifications and after adoption and implementation of mitigation measures. This conclusion is supported by the following findings:

The proposed project would have no effects on aesthetics, air quality, biological resources, energy, geology and soils, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, mineral resources, noise, population and housing, public services, recreation, transportation, utilities and service systems, and wildfire.

The proposed project would have a less-than-significant impact on agriculture and forestry resources, cultural resources and tribal cultural resources, and land use and planning with the adoption and implementation of the mitigation measures proposed in the IS.

The proposed project would not have the potential to substantially degrade the quality of the environment; substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; substantially reduce the number or restrict the range of an endangered, rare, or threatened species; or eliminate important examples of the major periods of California history or prehistory.

The proposed project would not have the potential to achieve short-term environmental goals to the disadvantage of long-term environmental goals.

The proposed project would not have possible environmental effects that are individually limited but cumulatively considerable and contribute to a significant cumulative impact. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.

The environmental effects of the proposed project would not cause substantial adverse effects on human beings, either directly or indirectly.

The proposed project incorporates BMPs in its project description that would be implemented with the contract specifications, as well as all mitigation measures listed below and described in the IS.

MITIGATION MEASURES: The following mitigation measures will be implemented as part of the project to avoid, minimize, rectify, reduce or eliminate, or compensate for potentially significant environmental impacts. Implementation of these mitigation measures would reduce the potentially significant environmental impacts of the proposed project to less-than-significant levels:

Mitigation Measure AG-1: Williamson Act Contract Non-Renewal

A condition of approval shall be required in County's Use Permit approval that the project site would be removed from the County's Williamson Act program.

Mitigation Measure CUL-1: Tribal Resources Sensitivity Training

Before the start of project planting activities, a Tribal Resources Sensitivity Training shall be implemented. A representative from Yocha Dehe Wintun Nation shall conduct the training for project personnel regarding background on indigenous use of the vicinity and protocol to follow should potential indigenous archaeological materials and/or tribal cultural resources be discovered. WES shall ensure that project personnel are made available for and attend the training and retain documentation demonstrating attendance.

Mitigation Measure CUL-2: Discovery or Recognition of Human Remains During Construction

In the event of discovery or recognition of any human remains during construction activities, such activities within 100 feet of the find shall immediately cease until the Colusa County Coroner has been contacted to determine that no investigation of the cause of death is required. The California Native American Heritage Commission (NAHC) shall be contacted within 24 hours if it is determined that the remains are Native American. The NAHC shall then identify the person or persons it believes to be the most likely descendant from the deceased Native American, who in turn would make recommendations to the lead agency for the appropriate means of treating the human remains and any grave goods. Per Public Resources Code Section 5097.98, the County shall ensure that the immediate vicinity of the location of the human remains is not damaged or disturbed by further development activity until the County has discussed and conferred with the most likely descendant regarding their recommendations, if applicable, taking into account the possibility of multiple human remains.

Mitigation Measure LU-1: Mitigation Bank Credit Reservation and Discount

A condition of approval shall be required in County's Use Permit approval that a mitigation bank credit and reservation agreement be entered into with the County of Colusa in order for the use permit to become effective. The terms of this agreement shall include discounts for the County's purchase of mitigation credits generally consistent with the recent Mitigation Bank Reservation and Discount Agreements, and shall be mutually acceptable to the County and WES and shall specify the number of credits reserved for the County, the discount amount, the amount of time of the reservation, and other applicable factors detailed in said agreement.

SACRAMENTO RIVER VALLEY ELDERBERRY LONGHORN BEETLE (VELB) CONSERVATION BANK

Environmental Checklist - Initial Study

1. **Project Title:** Sacramento River VELB Conservation Bank

2. **Lead Agency Name and Address:** County of Colusa Community Development Department, Planning Division 1213 Market Street, Colusa, CA 95932

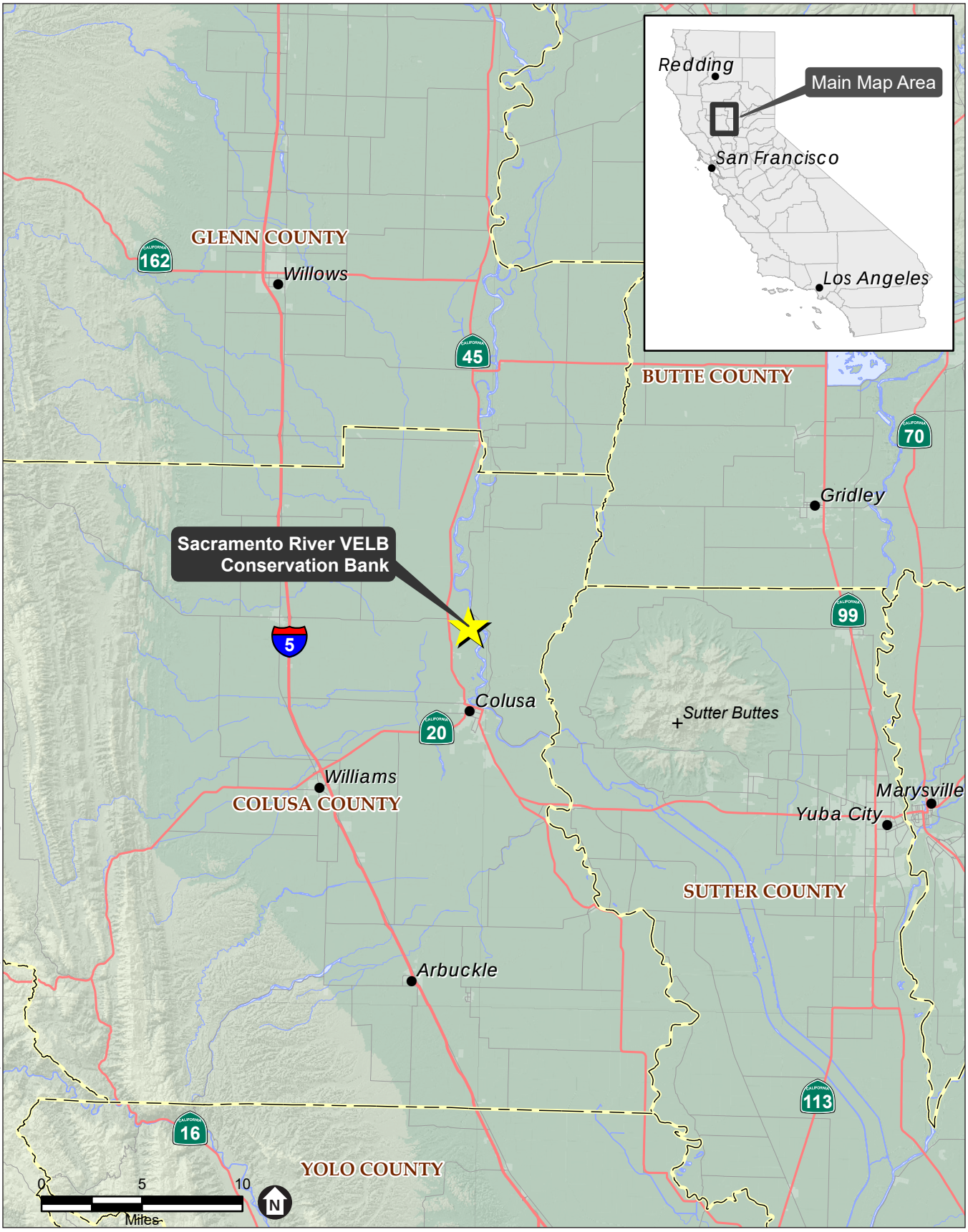
3. **Contact Person and Phone Number:** Steve Geiger Principal Planner (530) 458-0891

4. **Project Location:** The subject property is located at 4075 River Road in Colusa County, approximately 3.5 miles north of the City of Colusa (**Figure 1**). It is located just west of River Road and is bound by the Sacramento River to the west and south (**Figures 2 and 3**) (Section 31 of Township 17 North, Range 1 West, Mount Diablo Base and Meridian, within the Moulton Weir U.S. Geological Survey [USGS] 7.5-minute quadrangle). The approximately 13.3-acre project site located at the north end of the subject property is identified as Assessor's Parcel Number (APN) as 012-270-058 (**Figure 4**) and is a subset of a larger property (approximately 258 acres) owned by Westervelt Ecological Services, LLC (WES) which consists of APNs 012-270-043, 012-270-058, and 015-030-001.

5. **Project Sponsor's Name and Address:** Westervelt Ecological Services, LLC 3636 American River Drive, Suite 120 Sacramento, CA 95864

6. **General Plan Designation(s):** Designated Floodway

7. **Zoning:** River Frontage (R-F)



SOURCE: Westervelt Ecological Services

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Figure 1
Regional Vicinity

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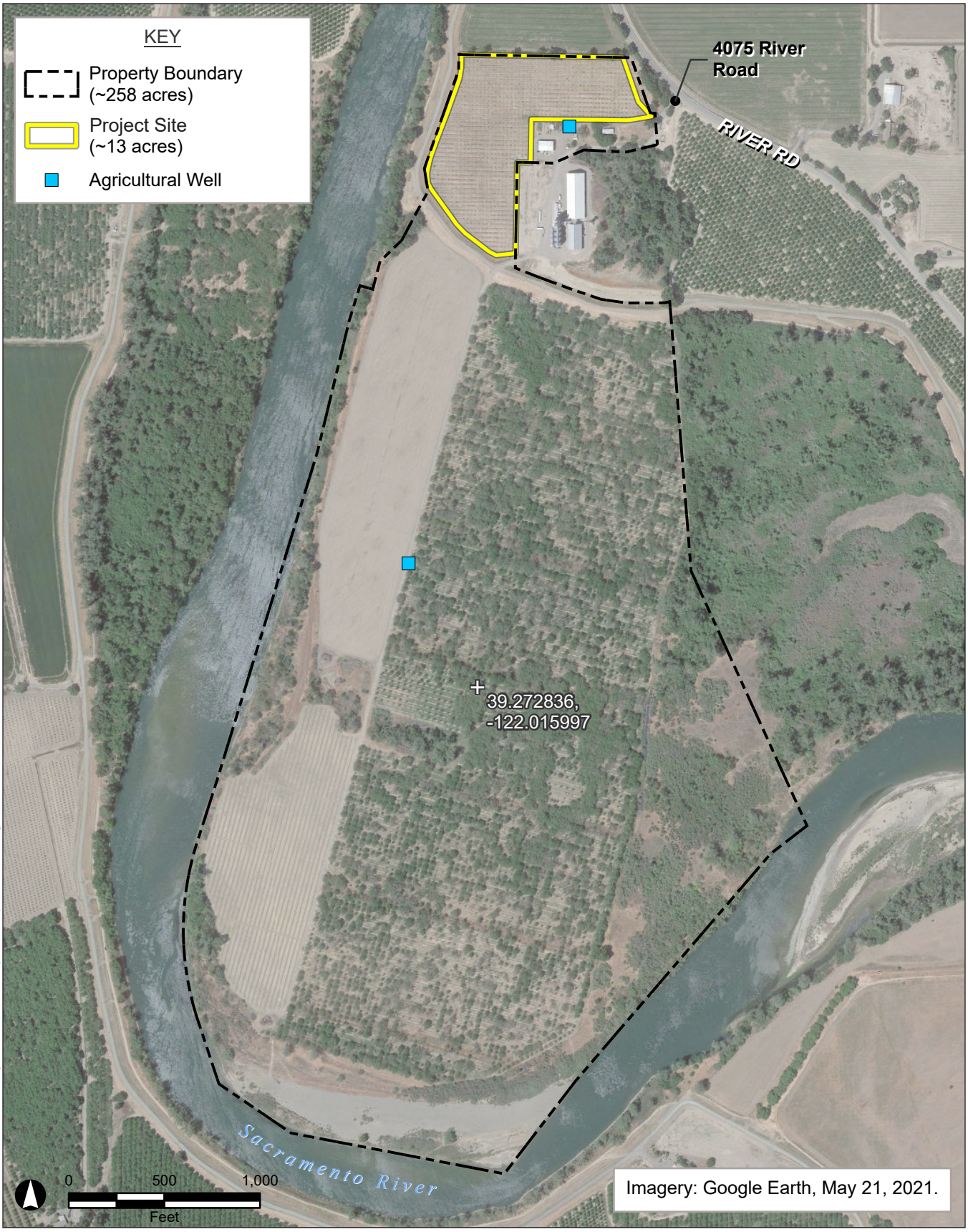

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SOURCE: Westervelt Ecological Services

SRVB Project

Figure 2
Project Site

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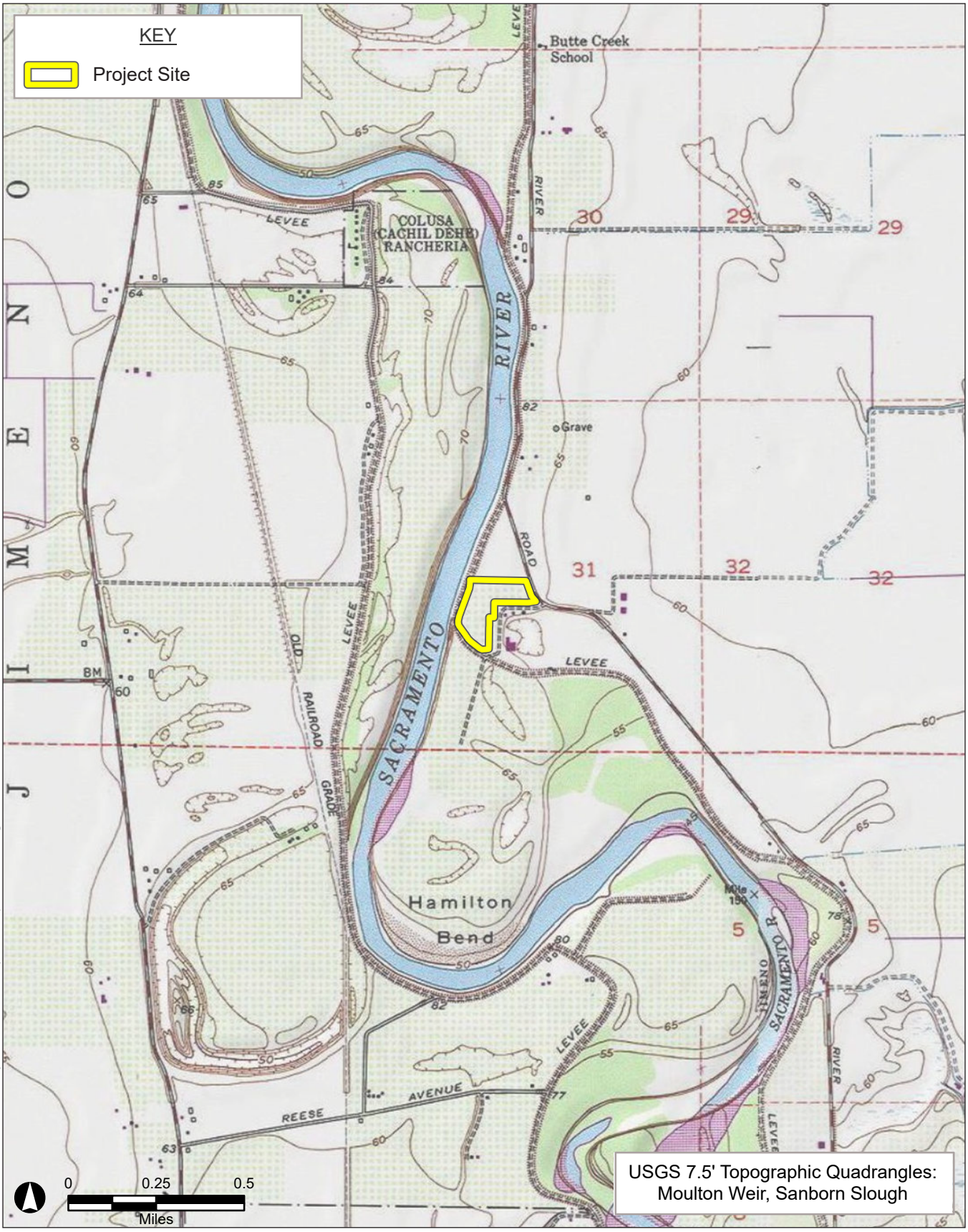

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SOURCE: Westervelt Ecological Services

SRVB Project

Figure 3
USGS Topography

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SOURCE: Westervelt Ecological Services

SRVB Project

Figure 4
Project Parcel

ESA

8. Description of Project

Purpose and Objectives

The proposed project would provide habitat for the federally listed Valley elderberry longhorn beetle (VELB; *Desmocerus californicus dimorphus*).

Specifically, the purpose of the proposed project is to provide compensatory mitigation credits for unavoidable impacts to VELB by developing suitable habitat that would be protected and maintained in perpetuity. The proposed project would maximize benefits and recovery efforts for VELB in a manner consistent with the *Draft Revised Recovery Plan for Valley Elderberry Longhorn Beetle* (USFWS 2018). The proposed project would be considered "private commercial" by the Recovery Plan and would serve a variety of public and private clients with projects that would impact VELB and its habitat. Credits would offset impacts regulated by the U.S. Fish and Wildlife Service (USFWS).

The proposed project objectives are to:

- Develop sustainable VELB habitat that maximizes habitat benefits and recovery efforts for VELB in a manner consistent with the Draft Revised Recovery Plan for Valley Elderberry Longhorn Beetle (USFWS 2018).
- Ensure that the VELB habitat is maintained and monitored in perpetuity so that it would continue to support habitat for VELB.
- Provide 329 species credits, based on the project site's approximately 13.3 acres.

Proposed Project

The proposed project would restore the 13.3-acre area to provide suitable habitat for VELB. The proposed project would be designed to provide suitable habitat for VELB with a shrub-dominated riparian habitat. The proposed project would be designed to be consistent with the *Conservation Guidelines for the Valley Elderberry Longhorn Beetle* (USFWS 1999); however, the design treats the site holistically and is intended to mimic a natural system.

Associate plantings would consist of native species that are appropriate to the geographic location and site conditions. Plants that may be used include but are not limited to: box elder (*Acer negundo* ssp. *californica*), walnut (*Juglans californica* var. *hindsii*), Fremont's cottonwood (*Populus fremontii*), Valley oak (*Quercus lobata*), California wild grape (*Vitis californica*) arroyo willow (*Salix lasiolepis*) and California button willow (*Cephalanthus occidentalis* var. *californicus*).

The number of elderberry plantings and associated trees and shrubs to be planted are summarized in **Table 1**. New elderberry plantings would be strategically placed to take advantage of the transplants as a potential beetle source, while making maximum use of the project site and utilizing a "natural" design.

TABLE 1
MINIMUM NUMBER OF ELDERBERRY PLANTINGS AND ASSOCIATED RIPARIAN TREES AND SHRUBS TO BE PLANTED

Planting Area		VELB Credits	Minimum number of elderberry plantings	Minimum number of associate trees and shrub plantings	Minimum number of plantings
(acres)	(square feet)				
13.3	579,348	321.86	1,611	1,612	3,223

Source: WES 2024

Construction Activities

Site Preparation and Best Management Practices

All site preparation would be conducted using traditional agricultural methods and equipment by WES staff and the onsite farmer. Minimal disking would occur to prepare the site and planting would occur by hand. During irrigation installation there may be the need for some light trenching, up to 12 inches in depth, maximum.

WES staff would come from Sacramento (approximately 80 miles from the project site) while the farmer and his staff are located in Colusa County. Up to 20 workers at a time may install the plants.

A WES staff member, or other qualified biologist, would observe and manage the initial planting for the proposed project on a weekly basis. They would direct planting to ensure the planting proceeds as approved. Planting activities would be managed to ensure that the habitats are installed as designed and to avoid impacting sensitive habitat.

The following best management practices (BMPs) would be implemented prior to and during construction to protect existing elderberry shrubs and other resources:

- The driplines of all existing elderberry shrubs would be clearly marked in the field for avoidance by a qualified biologist. The location of existing elderberry shrubs would be shown on all site plans for avoidance. No excavation or fill would occur within the driplines of existing elderberries.
- Erosion control BMPs would be implemented.
- If needed to minimize disturbance to existing vegetation, vehicle movement corridors and haul routes would be marked on construction drawings to minimize vehicular movement across the property.
- All construction staging activities would occur within a designated staging area (shown on Figure 4) that is currently used to stage farm equipment. This designated staging area would be located no closer than 300 feet from any existing threatened or endangered species habitat (e.g., VELB habitat) and would be marked in the field and on the construction plans.
- All refueling and equipment maintenance activities would occur within the designated staging area located immediately east and south of the project site within the project parcel (shown in

Figure 4). Any spill of hazardous materials would be cleaned up immediately, in accordance with all federal, state and local regulations.

- Construction would be stopped if any corrective actions are required and would be allowed to resume only after corrective actions have been implemented and alleviated the potential for detrimental activities.
- Any construction debris would be removed after construction is completed.

Planting and Seeding

Elderberry seedlings and associated native tree and shrub species would be obtained from local nurseries that specialize in restoration and implement BMPs to eliminate potential for pests. Source materials would be from the general north Central Valley. **Table 2** provides the species percent composition proposed to be installed. The plant composition was determined by reviewing plants that are already present on the property and in the vicinity, as well as a review of the soil types present.

TABLE 2
ELDERBERRY AND ASSOCIATED NATIVE PLANTINGS

Scientific Name	Common Name	% of Plant Total
Trees		
Quercus lobata	Valley oak	15%
Populus fremontii	Fremont's cottonwood	1%
Acer negundo ssp. *californicum*	Box elder	1%
Fraxinus latifolia	Oregon ash	3%
Juglans hindsii	Black walnut	4%
Shrubs		
Baccharis pilularis	Coyote brush	8%
Rhamnus californica	Coffeeberry	3%
Baccharis salicifolia	Mulefat	6%
Understory		
Rosa californica	California wild rose	8%
Vitis californica	California wild grape	1%
	Total Associates	**50%**
Sambucus nigra ssp. *caerulea*	Elderberry	50%
	Total	**100%**

Source: WES 2024

Irrigation

The created VELB habitat would be irrigated to help establish the plantings. The main irrigation system that is currently in place on the property would be used to drip irrigate the elderberry and native plantings. The water source would be the existing agricultural well on site (see Figure 2). The VELB habitat would only be irrigated long enough to establish the plants. Irrigation of the plantings would taper and ultimately be discontinued within five years after planting. The amount of irrigation water used would be less than when the project site was planted as a walnut orchard.

Elderberry Transplants

The proposed project has been designed to include a space for transplanted elderberry plants. Transplants would be allowed from throughout the VELB range[1]. If the USFWS identifies transplantation of an affected elderberry shrub from a future location as an appropriate conservation measure, those shrubs may be transplanted to the project site. Transplantation would employ horticultural best practices and would be conducted during the onset of elderberry dormancy or later, but prior to the bud break in the late winter. Prior to installation, transplantation locations within the project site would require some vegetation mowing as well as excavation to accept the root ball of the transplanted shrub. Transplants would receive deep watering following transplantation. Transplants would be accepted and planted at the project site up until the time the final credit sale occurs.

Phasing and Schedule

Planting activities would occur in fall/winter 2024 when permits and approvals are issued. Planting activities would occur until completion over approximately four days, generally during daylight hours, to the best extent possible; however, some activities, such as preparation, staging activities, and maintenance to equipment, may occur outside of daylight hours.

Operations and Maintenance

Habitat monitoring to document the achievements of performance standards would begin immediately and would involve one person conducting monitoring activities up to about 12 hours

[1] The VELB range of occupancy is based on the VELB range map provided by the USFWS. The northern boundary of the Service Area is located near Redding. The western border of the Service Area runs west of Interstate 5, past Red Bluff, Orland, Williams, Maxwell, and Vacaville before shifting east between Fairfield and Vacaville. It then continues just west of Interstate 580 until near Mendota. The southern border is located just north of Mendota and continues east past Madera. The Service Area then turns north and follows the 500-foot elevation just east of Madera, Merced, Modesto, Sacramento, Yuba City, and Chico before following just east of Interstate 5 back to Redding. The Service Are includes all or a portion of the following counties: Shasta Tehama, Glenn, Butte, Colusa, Sutter, Yuba, Yolo, Solano, Placer, Sacramento, Amador, Contra Costa San Joaquin Calaveras, Tuolumne, Stanislaus, Mariposa, Merced, and Medera. The range of the species is contained within these areas up to an elevation of approximately 500 feet.

in a given year. Post-construction project components would be limited to the following monitoring and land management activities to maintain restored habitat conditions.

Habitat Establishment (Project Outcome) Monitoring
The project site would be monitored on a regular basis during the habitat establishment period to ensure that the proposed project is performing as designed and anticipated (two people, one day a year. Activities during the habitat establishment period may include corrective measures, if necessary, to address potential problems identified during ongoing monitoring of the project site.

Long-term Operations and Management Monitoring

The project site would continue to be monitored and managed on a regular basis in perpetuity to ensure the proposed project's desired ecological benefits and trajectory are maintained into the future. The need for corrective actions after the project site has stabilized is anticipated to be minor.

A mower is the only anticipated equipment needed for operations. WES staff would perform all maintenance activities, most of which are related to mowing and irrigation. The amount of maintenance would decrease over time and would be less compared to historic farming needs on the project site.

Sheep grazing would be included on the project site during long term operations as part of vegetation management. Although it may vary by year, grazing would generally occur in the spring to early summer when the grasses and forbs are highly palatable. The number of sheep would range from 2 to 10 sheep per acre, resulting in 26 to 130 head. Duration would vary from one week to several weeks depending on the number of sheep. Temporary fencing would be installed to keep the sheep within the project site.

Adaptive Management Monitoring
The project site would be monitored and managed adaptively over time to determine if the site is functioning as intended. This includes whether physical attributes should be changed to enhance ecosystem function, if there any potential problems developing that may require corrective measures, and if monitoring or maintenance/management protocols need to be modified to ensure they are accomplishing their intended purposes.

9. Surrounding Land Uses and Setting:

The property has historically been maintained as a walnut orchard. In late 2019/early 2020 the older walnut trees were removed, and the property was replanted with new walnut trees. The walnut trees in the project site were removed in January 2024 and that past activity is not part of the proposed project. Most of the project site is mapped as "Prime Farmland" by the California Department of Conservation's Farmland Mapping and Monitoring Program. The property is also currently enrolled in the Williamson Act as an agricultural preserve (Contract No. 04-2). A conservation bank is not listed specifically in the contract as a compatible use; therefore, the property will be removed from the contract obligations prior to the conservation bank being established.

A U.S. Army Corps of Engineers Project levee is located just south of the property. Riparian habitat associated with the Sacramento River is located along the western boundary. The land to the north of the property is in agriculture and supports row crops. The area to the east is an agricultural processing plant. The land to the east of the property and south of the processing plant is conserved land where California Department of Fish and Wildlife (CDFW) holds a conservation easement (named Hamilton Bend conservation easement). The Sacramento River flows along the western and southern border of the property. WES owns the land to the south of the project site (within the approximately 258 acres identified as the property boundary in Figure 2) and intends to restore this portion of the property back to native habitat for VELB and salmonids under a separate project.

The project site is located within two watersheds, the Sacramento River watershed (HUC10 1802010412) and Lower Butte Creek watershed (HUC10 1802015). There are no regulated aquatic resources present within the project site. The topography of the project site is generally flat with elevations ranging from 65 to 82 feet above mean sea level. The U.S. Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) Soils Survey maps the project site as containing Moonbend silt loam, 0 to 2 percent slopes, occasionally flooded. One vegetation community occurs within the project site: walnut orchard. (WES 2023)

10. Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement):

Prior to project implementation, the following discretionary permits and approvals would be required:

- County of Colusa Use Permit
- Central Valley Flood Protection Board Encroachment Permit

11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?

Note: Conducting consultation early in the CEQA process allows tribal governments, lead agencies, and project proponents to discuss the level of environmental review, identify and address potential adverse impacts to tribal cultural resources, and reduce the potential for delay and conflict in the environmental review process. (See Public Resources Code section 21080.3.2.) Information may also be available from the California Native American Heritage Commission's Sacred Lands File per Public Resources Code section 5097.96 and the California Historical Resources Information System administered by the California Office of Historic Preservation. Please also note that Public Resources Code section 21082.3(c) contains provisions specific to confidentiality.

On January 19, 2024, representatives from WES and Environmental Science Associates (ESA) conducted a site visit on the project site with a Tribal representative from the Yocha Dehe Wintun Nation (YDWN). During the visit, details on the proposed project and the previous cultural resources study prepared for the project site (InContext 2022) were discussed. Additionally, YDWN and ESA representatives conducted an intensive-level pedestrian survey of the portion of the property in the vicinity of an archaeological resource identified by InContext just outside the property on a parcel not owned by WES. During the survey, no archaeological resources or indications thereof were observed on the property, and YDWN and ESA concluded that the

archaeological resource identified by InContext may, in fact, represent an imported gravel used for surfacing the adjacent levee. YDWN stated that they had no concerns regarding impacts on tribal cultural resources from the proposed project. YDWN's only recommendations were that a Tribal Resources Sensitivity Training be conducted for project construction personnel prior to implementation of the proposed project and that the Cachil Dehe Band of Wintun Indians of the Colusa Indian Community (Cachil Dehe) be contacted regarding the proposed project to see if they have any concerns regarding potential impacts on cultural resources or tribal cultural resources. In February 2024, ESA sent an email to the Cachil Dehe that provided details, including a map of the proposed project and requested that the Tribe provide any concerns they may have regarding potential impacts from the proposed project on cultural resources or tribal cultural resources. To date, ESA has not received any reply from Cachil Dehe. The recommended Tribal Resources Sensitivity Training is included as **Mitigation Measure CUL-1** below.
In addition to the early consultation with the Cachil Dehe Band of Wintun Indians as discussed above, Colusa County processed the Assembly Bill (AB) 52 notification using the contact list maintained by the Native American Heritage Commission (NAHC). In addition, this notification also included those tribes that had previously requested to be notified. No request for formal notification was made.

References

Fernandez, Trish. 2022 (September). Cultural Resources Study Report, Hamilton Bend Property. InContext, Sacramento, CA. Prepared for Westervelt Ecological Services, Sacramento, CA.

U.S. Fish and Wildlife Service (USFWS). 1999. Conservation Guidelines for the Valley Elderberry Longhorn Beetle. Sacramento Fish and Wildlife Office, Sacramento CA. Dated July 9, 1999.

———. 2018. Draft Revised Recovery Plan for Valley Elderberry Longhorn Beetle. U.S. Fish and Wildlife Service, Pacific Southwest Region, Sacramento, California. iii + 18 pp.

Westervelt Ecological Services (WES). 2023. Project Description. Sacramento River VELB Conservation Bank.

Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

☐ Aesthetics	☒ Agriculture and Forestry Resources	☐ Air Quality
☐ Biological Resources	☒ Cultural Resources	☐ Energy
☐ Geology/Soils	☐ Greenhouse Gas Emissions	☐ Hazards & Hazardous Materials
☐ Hydrology/Water Quality	☒ Land Use/Planning	☐ Mineral Resources
☐ Noise	☐ Population/Housing	☐ Public Services
☐ Recreation	☐ Transportation	☒ Tribal Cultural Resources
☐ Utilities/Service Systems	☐ Wildfire	☒ Mandatory Findings of Significance

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial study:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Gregory A Plucker Digitally signed by Gregory A Plucker Date: 2024.06.20 10:00:00 -07'00'

Signature

June 20, 2024

Date

Environmental Checklist

Aesthetics

Issues (and Supporting Information Sources):		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
I.	**AESTHETICS —** Except as provided in Public Resources Code Section 21099, would the project:				
a)	Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b)	Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c)	In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☐	☒
d)	Create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area?	☐	☐	☐	☒

Discussion

a-d) The proposed project does not lie within a designated scenic vista, nor will it have any adverse impact upon a scenic vista. The proposed project is not located in proximity to a state scenic highway (Caltrans 2019). The design of the proposed project is intended to mimic a natural system and would provide habitat for VELB with a shrub-dominated riparian habitat. Associate plantings would consist of native species that are appropriate to the geographic location and site conditions. The proposed project does not include industrial, residential, commercial, highways, or any other type of urban land use that would drastically change the character of the surrounding project area. No structures are proposed. Planting activities would occur until completion over approximately four days, generally during daylight hours, to the best extent possible; however, some activities, such as preparation, staging activities, and maintenance to equipment, may occur outside of daylight hours. While some lighting may be needed outside of daylight hours for planting activities, these activities would be limited in scale and of short duration and would not be a new source of substantial light or glare. Therefore, the proposed project would not have a substantial adverse effect on a scenic vista, degrade the visual character of the area or create a new source of light or glare. The project would have **no impact** on aesthetics.

References

California Department of Transportation (Caltrans). List of Eligible and Officially Designated State Scenic Highways. Available: https://dot.ca.gov/-/media/dot-media/programs/design/documents/desig-and-eligible-aug2019_a11y.xlsx. Accessed April 29, 2024.

Agriculture and Forestry Resources

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
II. AGRICULTURE AND FORESTRY RESOURCES — In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☒	☐
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☒	☐	☐
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

Discussion

a) The California Division of Land Resource Protection identifies important agricultural lands through the Farmland Mapping and Monitoring Program. Colusa County has approximately 558,000 acres identified as Important Farmlands (including Prime Farmland, Farmlands of Statewide Importance, Unique Farmland, and Farmland of Local Importance), or 75% of the total land within the County (CDC 2020). Most of the project site is mapped as "Prime Farmland" by the California Department of Conservation's Farmland Mapping and Monitoring Program, with portions of the overall property also mapped as "Unique Farmland" and "Other Land" (CDC 2022). The 13.3-acre project site represents approximately 0.002 percent of the approximately 558,000 acres identified as Important Farmlands in Colusa County.

Colusa County's Zoning Ordinance Section 44-0.10 defines "agriculture" as "The use of land for the raising of crops, trees, or animals, including farming, dairying, pasturage, agriculture, horticulture, floriculture, viticulture, apiaries, and animal and poultry husbandry…".

Historically, the property has been maintained as a walnut orchard; however, the walnut trees were removed from the project site in January 2024 and that past activity is not part of the proposed project. The proposed project design is intended to mimic a natural system and would provide habitat for VELB with a shrub-dominated riparian habitat. Associate plantings would consist of native species that are appropriate to the geographic location and site conditions. The proposed project does not include industrial, residential, commercial, highways, or any other type of urban land use that would drastically change the character of the surrounding project area. Furthermore, the proposed project does not include paving of the soil or building construction that would render soil on the site unsuitable for agriculture.

The property and project site would continue to be used in part for agricultural purposes through sheep grazing that would be included on the project site during long term operations as part of vegetation management. While it may vary, grazing would typically occur during spring or early summer when the grasses and forbs are highly palatable for sheep. The stocking rate could vary between 2 to 10 sheep per acre on the project site, resulting in 26 to 130 head, with the potential for additional grazing densities on the overall property. Based on the number of sheep used, duration of grazing would vary between one week to several weeks. Temporary fencing would be installed to keep the sheep within the project site. Therefore, the proposed project would not convert Prime Farmland to non-agricultural use and this impact would be **less than significant**.

b) The subject property is zoned River Frontage (R-F). As described in Colusa County Zoning Code Section 44-2.60.10, the purpose of the R-F zone is to identify lands which lie within river, stream, or tidal channels, and to adjacent areas which are periodically inundated, or which are predicted to be inundated, by a "design flood." Appropriate uses in the R-F zone include agricultural and recreational uses that do not include permanent structures. Approval of a Use Permit from Colusa County is required prior to project implementation. Pursuant to Colusa County Zoning Code Section 44-1.80.030, a use permit is required for uses that are generally appropriate within a zone but due to their nature require site-specific review and consideration of site design to ensure compatibility with surrounding areas and uses. A use permit is a discretionary action that enables the County to ensure that a proposed use is consistent with all General Plan goals and policies and will not create negative impacts to adjacent properties or the general public.

The property is currently enrolled in the Williamson Act as an agricultural preserve (Contract No. 04-2). A Williamson Act contract allows local governments to enter into contracts with private landowners to restrict specific parcels of land for the protection of open space or agricultural resources. Under the County's Williamson Act program, the contract for the property specifies that land shall be used for agricultural and compatible uses. The primary purpose of a mitigation bank is to establish habitat for certain species and protect that habitat by restricting other uses of the property. Because of this restriction, the ability to use the property for agricultural purposes to its fullest extent allowed by the County's General Plan and Zoning agricultural provisions and the

County's Williamson Act program are constrained. As such, while some limited agricultural activities would still occur, mitigation banks conflict with the basic purpose of the County's Williamson Act program. To remove this land use conflict, the project area would be removed from the County's Williamson Act program through the non-renewal process. As described in **Mitigation Measure AG-1** (see below) the County's Use Permit approval will include a condition that the project site would be removed from the County's Williamson Act program.

The proposed project would include the planting of shrub-dominated riparian habitat within the 13.3-acre project site. The property and project site would continue to be used in part for agricultural purposes through sheep grazing that would be included on the project site during long term operations as part of vegetation management, as described in question (a) above. The proposed project would not conflict with a Williamson Act contract as the property will be removed from the contract obligations prior to the conservation bank being established. The proposed project would not conflict with existing zoning for agricultural use with acquisition of a use permit from the County of Colusa as described in **Mitigation Measure AG-1**; therefore, this impact would be **less than significant**.

c, d) "Forest Land" is defined in California Public Resource Code Section 12220(g) as "land that can support 10 percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits." "Timberland" is defined in California Public Resource Code Section 4526 as "land, other than land owned by the federal government and land designated by the board as experimental forest land, which is available for, and capable of, growing a crop of trees of any commercial species used to produce lumber and other forests products, including Christmas Trees. Commercial species shall be determined by the board on a district basis after consultation with the district committees and others." The project site and property do not contain forest land or coniferous forest. The property is zoned R-F and is not zoned as forest land as defined in Public Resource Code Section 12220(g), timberland as defined in Public Resource Code Section 4526, or a Timberland Production Zone (TPZ) as defined in Government Code Section 51104(g). The proposed project would not conflict with existing zoning for, or cause rezoning of forest land, timberland, or timberland zoned Timberland Production or result in the loss of forest land or conversion of forest land to non-forest use. Therefore, **no impact** would occur.

e) The proposed project would not involve other changes in the environment that could result in the conversion of farmland or forestland to non-agricultural or non-forestland uses, as described in questions (a) and (b). The proposed project entails planting native habitat, and would include sheep grazing, during long term operations as part of vegetation management. The habitat that would be planted would be the same plant composition that already occurs in the riparian habitat along the Sacramento River and the CDFW conserved land to the east. All of the species that may use the project site are already in the vicinity and utilizing the existing habitat; therefore, no additional wildlife

or other species are anticipated to be attracted to that habitat that are not already present in the vicinity. The land would remain physically viable for agricultural uses and would not involve the creation of impervious surfaces or other uses that would compromise the soil of the project site. In addition, since the project entails planting native habitat similar to plant compositions that already occur and survive in the area, existing agricultural practices (e.g., agricultural spraying, etc.) from adjacent farming would not have an impact on this project. **No impact** would occur.

Mitigation Measures

Mitigation Measure AG-1: Williamson Act Contract Non-Renewal

A condition of approval shall be required in County's Use Permit approval that the project site would be removed from the County's Williamson Act program.

References

California Department of Conservation (CDC). 2020. Alternate Colusa County 2018-2020 Land Use Conversion Table A-5. Available: https://www.conservation.ca.gov/dlrp/fmmp/Documents/fmmp/pubs/2018-2020/Alternate_Conversion_tables/Alternate_Colusa_County_2018-2020_Land_Use_Conversion.pdf. Accessed February 6, 2024.

———. 2022. California Important Farmland Finder, 2022. Available: https://www.conservation.ca.gov/dlrp/fmmp. Accessed November 6, 2023.

Colusa County. 2023. Colusa County Zoning Code. Current through Ordinance 833 passed November 7, 2023. Available: https://www.codepublishing.com/CA/ColusaCounty/#!/ColusaCounty44.html. Accessed February 1, 2024.

Air Quality

Issues (and Supporting Information Sources):		*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
III.	**AIR QUALITY —** Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:				
a)	Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b)	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	☒	☐
c)	Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☐	☒
d)	Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☐	☒

Discussion

a, b) All site preparation for the proposed project would be conducted using traditional agricultural methods and equipment by WES staff and the onsite farmer. Minimal disking would occur to prepare the site and planting would occur by hand. Minimal mechanical equipment that would generate pollutant emissions would be required for construction and operation of the proposed project and equipment needs would likely be less than when the project site was managed as a walnut orchard.

The construction phase would entail earth-moving activities that could generate limited dust. However, any impacts on air quality from project construction would be of limited scale and short-term over the four days of planting. Given the nature of the proposed project, it would not violate any air quality standards or contribute substantially to an existing or projected air quality violation; therefore, this impact would be **less than significant**.

c, d) There are no residences or other sensitive receptors within vicinity to the project site. Construction and implementation of the proposed project would not conflict expose sensitive receptors to substantial pollutant concentrations or create objectionable odors affecting a substantial number of people. There would be **no impact**.

Biological Resources

Issues (and Supporting Information Sources):		*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
IV.	**BIOLOGICAL RESOURCES —** Would the project:				
a)	Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☒	☐
b)	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
c)	Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d)	Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒
e)	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f)	Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

Discussion

a) Helm Biological Consulting (HCB), a division of Tansley Team, Inc., prepared a reconnaissance-level biological resource assessment of approximately 235-acres of the property that includes the 13.3-acre project site (Helm 2022; Appendix A). As part of the assessment, a survey was conducted by HCB biologists on July 8, 2022, to describe and map common and sensitive communities and habitats present, identify special-status and common plant and wildlife species' occurrences, and assess habitat types present for suitability to support special-status species. HCB biologists also conducted an aquatic-resources delineation field survey according to current state and federal guidelines to identify and map potential waters of the U.S. and state on the property.

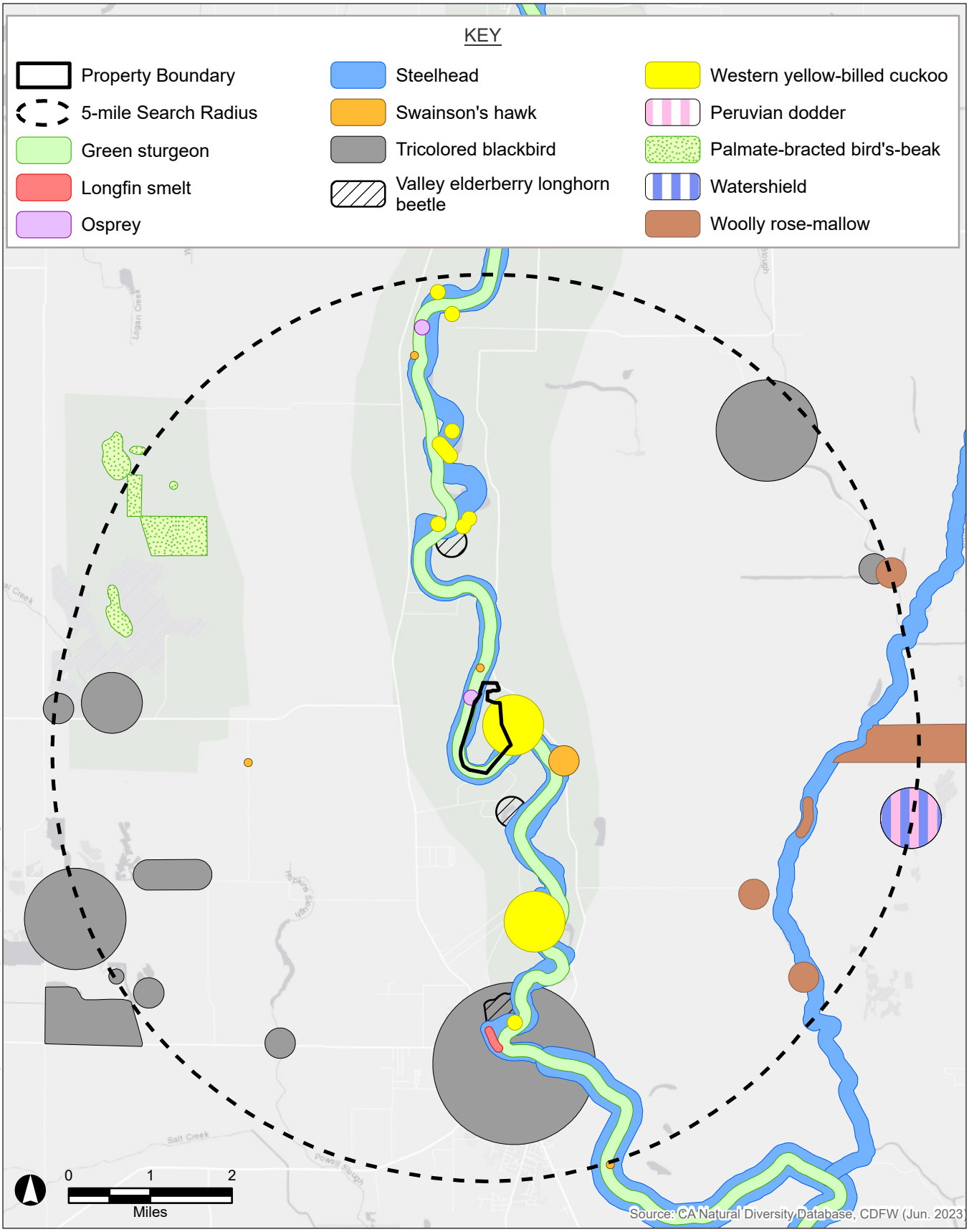
During the field survey to map habitat and assess special-status species habitat suitability, all plant and wildlife species, or signs (scat, prints, etc.), observed onsite were recorded in field notes. The notes were compiled into a complete list of all wildlife and plant species occurring onsite and within each habitat type. Four habitat types were identified within the property: agricultural field, ruderal/developed, riparian, and annual grassland. Habitats within the project site were identified as agricultural (walnut) and ruderal/developed (Figure 4 in Appendix A; Helm 2022).

Prior to conducting the biological survey, a list of special-status plant and wildlife species known to occur in the project vicinity was compiled from the following sources: California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) and the California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants Database of the Moulton Weir USGS 7.5-minute topographic quadrangle map, and species list for the property generated by the U.S. Fish and Wildlife Service (USFWS) Environmental Conservation Online System (Helm 2022).

The database searches and known habitat on the property identified six special-status plants that are known to occur within a 5-mile radius of the property (see **Figure 5**). Of these six special-status plants, none are known to occur onsite and two have the potential to occur onsite: Sanford's arrowhead (*Sagittaria sanfordii*) and woolly rose-mallow (*Hibiscus lasiocarpos* var. occidentalis). Potential habitat for Sanford's arrowhead was identified along the Sacramento River within the property and potential habitat for Woolly rose-mallow was identified in the riprap along the Sacramento River within the property (Helm 2022); these locations are not within the project site and no special-status plants are anticipated to be impacted by the proposed project.

The database searches identified 18 special-status wildlife species that are known to occur within a 5-mile radius of the property. An additional 23 special-status species were added to the list of potential species that could occur on the property based on their presence just outside of the 5-mile radius or their association with habitats that occur onsite. Of these 41 special-status wildlife species; 12 species were not considered to have potential to occur on the property since they inhabit habitat communities (i.e., vernal pools) that are not present within the property; nine species are not probable to occur on the property; three species are known to occur on the property (osprey [*Pandion haliaetus*], green sturgeon - southern DPS [*Acipenser medirostris* pop. 1, and steelhead - Central Valley DPS [*Oncorhynchus mykiss irideus* pop. 11]; and the remaining 17 species have the potential to occur on the property (see Appendix A [Table B in Appendix B]; Helm 2022). Osprey are known to nest within the property and green sturgeon and steelhead are known to occur in the adjacent Sacramento River. These locations are not within the project site and no special-status animals are anticipated to be impacted by the proposed project.

In addition to special-status bird species that may be present, other migratory birds and raptors protected by the Migratory Bird Treaty Act and California Fish and Game Code may also nest onsite, as the overall property contains a variety of nesting habitat. However, the proposed planting activities would occur outside of the nesting season and no tree removal is proposed; therefore, the proposed project is not expected to impact nesting birds.



SOURCE: Westervelt Ecological Services

SRVB Project

Figure 5
Select CNDDB Species Occurrences

ESA

All site preparation would be conducted using traditional agricultural methods and equipment by WES staff and the onsite farmer. No tree removal is proposed, and minimal disking would occur to prepare the site and planting would occur by hand. During irrigation installation there may be the need for some light trenching, up to 12 inches in depth, maximum. Planting activities would be managed to ensure that the habitats are installed as designed and to avoid impacting sensitive habitat. Further, BMPs are included in the Project Description (Section 8) to protect existing elderberry shrubs (which may host VELB).

As stated in **Section I (Agriculture and Forestry Resources)**, question (e), the habitat that would be planted as part of the proposed project would be the same plant composition that already occurs in the riparian habitat along the Sacramento River and the CDFW conserved land to the east. All of the wildlife and other species that may use the project site are already in the vicinity and utilizing the existing habitat; therefore, no additional wildlife or other species are anticipated to be attracted to that habitat that are not already present in the vicinity.

Therefore, with the inclusion of the BMPs identified in the Project Description (Section 8), the impact on special-status species and their habitat would be **less than significant**.

b, c) Based on the biological resource assessment conducted by Helm (Helm 2022), the project site does not contain riparian habitat. There is riparian habitat within the property (see Figure 4 in Helm 2022); a total of approximately 4.7 acres of riparian habitat was identified on the property as potential waters of the U.S. and State based on the presence of an ordinary high-water mark (OHWM) and could be under U.S. Army Corps of Engineers (USACE), CDFW, and Regional Water Quality Control Board jurisdiction. An additional approximately 18.7 acres of riparian habitat on the property is potentially under CDFW jurisdiction based on top of bank and canopy of riparian vegetation.

The closest riparian habitat on the property is approximately 185 feet southwest of the project site adjacent to the Sacramento River, on the other side of an access road. The proposed project would not disturb riparian habitat and therefore would not have a substantial adverse effect on any riparian habitat, State or federally protected wetlands or other sensitive natural communities. **No impact** would occur.

d) The proposed project would not substantially interfere with the movement of any native resident or migratory fish or wildlife species or established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites. In addition to VELB, the restoration and enhancement activities proposed for the project site would also increase the possibility of usage by other terrestrial species, including special-status species known to occur in the vicinity of project site (this is considered a beneficial effect). **No impact** would occur.

e) The proposed project does not include tree removal and with the inclusion of the BMPs identified in the Project Description (Section 8), would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. **No impact** would occur.

f) There are no Habitat Conservation Plans, Natural Community Conservation Plans, or other similar plans applicable to the project site. There are several areas managed for habitat and wildlife conservation in the vicinity of the property, including the Delevan National Wildlife Refuge approximately 3.5 miles west of the project site and the Colusa National Wildlife Refuge approximately 5.2 miles to the southwest. The proposed project would complement existing conservation management in the region. No conflict with any existing Habitat Conservation Plan or Natural Community Conservation Plan has been identified; therefore, **no impact** would occur.

References

HELM Biological Consulting. 2022 (November). Reconnaissance-Level Biological Resources Assessment at the Hamilton Bend Mitigation Site, Colusa County, California.

Cultural Resources

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
V. CULTURAL RESOURCES — Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	☐	☒	☐	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☒	☐	☐

Discussion

a, b) InContext conducted a cultural resources study of the approximately 258-acre property that includes the 13.3-acre project site in 2022 (Fernandez 2023). InContext's study consisted of a records search of the California Historical Resources Information System (CHRIS), additional background research on the property and vicinity, a cultural resources pedestrian survey of the property, and recommendations. InContext's study did not identify any architectural resources on the project site, though it did identify one archaeological resource (a single isolate); however, ESA's review of the resource's mapped location in 2023 resulted in a determination the resource was mapped just outside the property on a parcel not owned by WES.

In December 2023, ESA sent an email to the Yocha Dehe Wintun Nation (YDWN) providing details, including a map, of the proposed project and requesting that the Tribe provide any concerns they may have regarding potential impacts from the proposed project on cultural resources and tribal cultural resources. The email also invited the Tribe to participate in a site visit to the property to discuss the proposed project and any concerns the Tribe may have. YDWN replied to ESA the same month via email and letter, requesting engagement on the proposed project and additional information on its associated cultural resources study. On January 19, 2024, representatives from WES and ESA conducted a site visit on the project site with a Tribal representative from YDWN. During the visit, details on the proposed project and InContext's cultural resources study were discussed. Additionally, YDWN and ESA representatives conducted an intensive-level pedestrian survey of the portion of the property in the vicinity of the archaeological resource identified by InContext just outside the property on a parcel not owned by WES. During the survey, no archaeological resources or indications thereof were observed in the property, and YDWN and ESA concluded that the archaeological resource identified by InContext may, in fact, represent an imported gravel used for surfacing the adjacent levee. YDWN stated that they had no concerns regarding impacts on cultural resources from the proposed project. YDWN's only recommendations were that a Tribal Resources Sensitivity Training be conducted for project construction personnel prior to implementation of the proposed project and that the Cachil Dehe Band of Wintun Indians

of the Colusa Indian Community (Cachil Dehe) be contacted regarding the proposed project to see if they have any concerns regarding potential impacts on cultural resources or tribal cultural resources.

In February 2024, ESA sent an email to the Cachil Dehe that provided details, including a map, of the proposed project and requested that the Tribe provide any concerns they may have regarding potential impacts from the proposed project on cultural resources or tribal cultural resources. To date, ESA has not received any reply from Cachil Dehe. The recommended Tribal Resources Sensitivity Training is included as **Mitigation Measure CUL-1** below.

In summary, no architectural resources that qualify as historical resources, as defined in CEQA Guidelines Section15064.5, or archaeological resources that qualify as historical resources, as defined in CEQA Guidelines Section 15064.5, or unique archaeological resources, as defined in Public Resources Code Section 21083.2(g) have been identified in the property. Given small scale and limited ground disturbance that would occur with the proposed project (with light trenching to a maximum depth of 12 inches possible during installation of the irrigation system and staging in an area of the project parcel that is currently used to stage farm equipment, shown in Figure 4), the likelihood of causing a substantial adverse change in the significance of a historical resource or archaeological resource that has yet to be identified is low. Therefore, the proposed project is not anticipated to result in any impacts on a historical resource or unique archaeological resource, as defined by CEQA (CEQA Guidelines Section 15064.5, Public Resources Code Section 21083.2[g]). However, to protect potential previously unidentified archaeological resources that may qualify as historical resources or unique archaeological resources, **Mitigation Measures CUL-1** and **CUL-2** would be implemented (see below). Therefore, impacts on historical resources and unique archaeological resources are anticipated to be **less than significant with mitigation incorporated**.

c) No human remains have been identified in the property through archival research, field surveys, or Native American outreach. Also, the land use designations for the property do not include cemetery uses, and no known human remains exist within the property. Therefore, the proposed project is not anticipated to disturb any human remains. However, to protect potential previously unidentified human remains, **Mitigation Measures CUL-1** and **CUL-2** would be implemented. Therefore, impacts on human remains are anticipated to be **less than significant with mitigation incorporated**.

Mitigation Measures

Mitigation Measure CUL-1: Tribal Resources Sensitivity Training

Before the start of project planting activities, a Tribal Resources Sensitivity Training shall be implemented. A representative from Yocha Dehe Wintun Nation shall conduct the training for project personnel regarding background on indigenous use of the vicinity and protocol to follow should potential indigenous archaeological materials and/or tribal

cultural resources be discovered. WES shall ensure that project personnel are made available for and attend the training and retain documentation demonstrating attendance.

Mitigation Measure CUL-2: Discovery or Recognition of Human Remains During Construction

In the event of discovery or recognition of any human remains during construction activities, such activities within 100 feet of the find shall immediately cease until the Colusa County Coroner has been contacted to determine that no investigation of the cause of death is required. The California Native American Heritage Commission (NAHC) shall be contacted within 24 hours if it is determined that the remains are Native American. The NAHC shall then identify the person or persons it believes to be the most likely descendant from the deceased Native American, who in turn would make recommendations to the lead agency for the appropriate means of treating the human remains and any grave goods. Per Public Resources Code Section 5097.98, the County shall ensure that the immediate vicinity of the location of the human remains is not damaged or disturbed by further development activity until the County has discussed and conferred with the most likely descendant regarding their recommendations, if applicable, taking into account the possibility of multiple human remains.

References

Fernandez, Trish. 2022 (September). Cultural Resources Study Report, Hamilton Bend Property. InContext, Sacramento, CA. Prepared for Westervelt Ecological Services, Sacramento, CA.

Energy

Issues (and Supporting Information Sources):		*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
VI.	**ENERGY —** Would the project:				
a)	Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐
b)	Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☐	☒

Discussion

a) Construction activities associated with the proposed project would consume energy in the form of diesel and gasoline fuels to power limited mechanical equipment and vehicles used to transport workers and materials to the project site. No additional electrical infrastructure is proposed or required with the proposed project. Operation and maintenance of the proposed project is not anticipated to increase consumption of diesel or gasoline fuel compared to historical use of the project site as a walnut orchard as existing staff and maintenance vehicle trips would conduct operation and maintenance activities. Therefore, project construction and operation would not require excessive or wasteful use of energy. Impacts would be **less than significant**.

b) As noted in question (a) above, no additional electrical infrastructure is proposed or required with the proposed project and operation and maintenance of the proposed project is not anticipated to increase consumption of diesel or gasoline fuel compared to historical use of the project site as a walnut orchard. The proposed project would not conflict with applicable energy policies. **No impact** would occur.

Geology and Soils

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
VII. GEOLOGY AND SOILS — Would the project:				
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒

Discussion

a) The proposed project would not result in the construction of above-ground structures such as commercial buildings or residential dwellings. Additionally, the proposed project would not result in a substantial increase in the number of people to the project site. No Alquist-Priolo Earthquake Fault Zones or Seismic Hazard Zones are identified within the County of Colusa (Colusa County 2010). The Sacramento River corridor presents the greatest likelihood of loose sediment and saturated soils within Colusa County. The project site is not located in a region with high landslide susceptibility (Colusa County 2010). Given the nature of the proposed project, it would not expose people or structures to substantial adverse effects including the risk of loss, injury, or death involving seismic rupture, strong-seismic shaking, seismic-related ground failure or liquefaction, landslides, or related soil hazards. Impacts would be **less than significant**.

b) The project site contains Moonbend silt loam, 0 to 2 percent slopes, and slopes on the project site are generally flat. Construction activities associated with the proposed project would involve ground-disturbing earthwork, including minimal disking and light trenching. Staging would occur in an area in the project parcel that is currently used to stage farm equipment, shown on Figure 4. These activities could increase the susceptibility of soils on the project site to erosion by wind or water and subsequently result in the loss of topsoil. As described in *Site Preparation and Best Management Practices* (Section 8), erosion control BMPs would be implemented. Impacts on soil erosion or the loss of topsoil would be **less than significant**.

c, d) Approximately two-thirds of Colusa County's land surface is comprised of soils that would require special design considerations due to shrink-swell potentials, including areas along the Sacramento River. The subject property is located to the east of the Sacramento River, but the proposed project would not include the construction of habitable structures and construction activities would be short term and temporary. The proposed project would not create substantial direct or indirect risks to life or property related to unstable or expansive soils, and impacts would be **less than significant**.

e) The proposed project would not result in the use of septic tanks or alternative wastewater disposal systems, therefore, there would be **no impact**.

f) The proposed project would not destroy any unique geologic features on the project site. Due to the nature of the soils in the project site and the nature of the proposed project which would involve relatively shallow trenching of up to 12 inches in depth, the probability of encountering paleontological resources within the project site is minimal. Therefore, the proposed project would not destroy a unique paleontological resource or site or unique geologic feature. There would be **no impact**.

References

Colusa County. 2010. Colusa County General Plan Background Report. Available: http://www.countyofcolusageneralplan.org/sites/default/files/Colusa%20Background%20Report_Complete_no%20figures.pdf.

HELM Biological Consulting. 2022 (November). Reconnaissance-Level Biological Resources Assessment at the Hamilton Bend Mitigation Site, Colusa County, California.

Greenhouse Gas Emissions

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
VIII. GREENHOUSE GAS EMISSIONS — Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

Discussion

a, b) The proposed project would not significantly increase greenhouse gas emissions either directly or indirectly. All site preparation would be conducted using traditional agricultural methods and equipment by WES staff and the onsite farmer. Minimal disking would occur to prepare the site and planting would occur by hand. Minimal mechanical equipment that would generate pollutants or greenhouse gas emissions would be required for construction or operation of the proposed project and equipment needs would likely be less than when the project site was managed as a walnut orchard. Given the nature of the proposed project, it would not conflict with plans, policies or regulations adopted by the State of California or the Colusa County Air Pollution Control District for reducing greenhouse gas emissions. Impacts would be **less than significant**.

Hazards and Hazardous Materials

Issues (and Supporting Information Sources):		*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
IX.	**HAZARDS AND HAZARDOUS MATERIALS —** Would the project:				
a)	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b)	Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c)	Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d)	Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e)	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
f)	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
g)	Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	☐	☐	☒	☐

Discussion

a, b) Construction and operation of the proposed project would involve the use of small quantities of fuel and other petroleum-based products such as oil and transmission fluids, which are considered hazardous materials. Project construction would include BMPs to minimize the risk of a hazardous materials release during construction activities, further discussed under *Site Preparation and Best Management Practices* above in Section 8. In addition, the project would be subject to the applicable requirements of the Colusa County Certified Unified Program Agency (CUPA) including obtaining a Hazardous Material Business Plan should quantities of regulated substances exceed exempted amounts. All refueling and maintenance activities would occur within the designated staging area (shown in Figure 4). Any spill of hazardous materials would be cleaned up immediately, in accordance with all federal, state and local regulations. Therefore, impacts associated with the potential to create a significant hazard to the public or the environment would be **less than significant**.

c) There are no schools within 0.25 mile of the project site, therefore, the potential for hazardous emissions or handling of hazardous materials within 0.25 mile of an existing or proposed school would not occur. There would be **no impact**.

d) The proposed project site is not included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 (referred to as the "Cortese List") (DTCS 2024; State Water Board 2024). Therefore, the proposed project would not create a significant hazard to the public or the environment and there would be **no impact**.

e) The project site is not located within an airport land use plan and there are no airports located within 2 miles of the project site; therefore, there would be **no impact**.

f) Project construction would not require road closures or obstruct nearby roadways, and the proposed project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Therefore, there would be **no impact**.

g) According to the California Department of Forestry and Fire Protection, the subject property is located within a Local Responsibility Area (not in or near a State Responsibility Area) and is not within a high fire hazard severity zone (CAL FIRE 2023). The proposed project would not significantly exacerbate risk associated with the loss, injury, or death involving wildland fires. Impacts would be **less than significant**.

References

California Department of Forestry and Fire Protection (CAL FIRE). 2023. Fire Hazard Severity Zones in State Responsibility Area. Map updated September 29, 2023. Available: https://osfm.fire.ca.gov/divisions/community-wildfire-preparedness-and-mitigation/wildfire-preparedness/fire-hazard-severity-zones/. Accessed April 24, 2024.

California Department of Toxic Substance Control (DTSC). 2024. EnviroStor Hazardous Waste and Substances Site List (CORTESE). Available: https://www.envirostor.dtsc.ca.gov/public/search?cmd=search&reporttype=CORTESE&site_type=CSITES,FUDS&status=ACT,BKLG,COM&reporttitle=HAZARDOUS+WASTE+AND+SUBSTANCES+SITE+LIST+%28CORTESE%29. Accessed April 24, 2024.

State Water Resources Control Board (State Water Board). 2024. Geotracker. Available: https://geotracker.waterboards.ca.gov/map/?global_id=T0607302824. Accessed April 24, 2024.

Hydrology and Water Quality

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
X. HYDROLOGY AND WATER QUALITY — Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☐	☒
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i) result in substantial erosion or siltation on- or off-site;	☐	☐	☒	☐
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☐	☒	☐
iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☒	☐
iv) impede or redirect flood flows?	☐	☐	☒	☐
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☒	☐
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐

Discussion

a) The main irrigation system that is currently in place on the property would be used to drip irrigate the proposed elderberry and native plantings. During irrigation installation to expand the system there may be the need for some light trenching, up to 12 inches in depth, maximum, which could expose and disturb small areas of ground, and staging would occur in an area of the project parcel that is currently used to stage farm equipment area (shown on Figure 4). The construction period would be of short duration, and operations and maintenance-related activities would be limited to monitoring and land management activities to maintain restored habitat conditions. The proposed project would not create new sources of water discharge or violate water quality standards. **No impact** would occur.

b) The water source for the proposed project would be the existing agricultural well on site. The VELB habitat would only be irrigated long enough to establish the plants and ultimately be discontinued within five years after planting. The amount of irrigation water used would be less than when the project site was planted as a walnut orchard. The

proposed project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge; therefore, this impact would be **less than significant**.

c) During irrigation installation there may be the need for some light trenching, up to 12 inches in depth, maximum, which could expose and disturb small areas of ground, and staging would occur in an area of the project parcel that is currently used to stage farm equipment (shown in Figure 4). The proposed project would not substantially alter the existing drainage pattern of the site or area. The proposed project would not include the addition of impervious surfaces or produce erosion or substantive runoff volumes. Impacts would be **less than significant**.

d) The proposed project would not include the storage of any pollutants that would be at risk of release due to flood inundation because no new chemicals or fuels would be stored onsite. Project construction would include BMPs to minimize the risk of a hazardous materials release during construction activities, further discussed under *Site Preparation and Best Management Practices* above in Section 8. Seiches are large waves on an enclosed or semi-enclosed body of water that can be caused by seismic activity. The project area is landlocked (located to the east of the Sacramento River) and not within proximity of any closed or semi-enclosed water body; there is no risk of the project altering conditions related to seiches. Tsunamis occur on the ocean and the project area is not located near the ocean. Therefore, there would be a **less than significant impact** related to the risk of release of pollutants due to project inundation caused by a flood, seiche, or tsunami.

e) As noted above, the proposed project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge and therefore would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. Impacts would be **less than significant**.

References

Colusa County. 2012. Colusa County General Plan. Adopted July 31, 2013. Available: https://www.countyofcolusa.org/137/General-Plan. Accessed February 5, 2024.

———. 2019. Colusa County Zoning Map. July 2019. Available: https://www.countyofcolusa.org/DocumentCenter/View/4468/Adopted-Countywide-Zoning-Map_Current-to-July-2019?bidId=. Accessed February 5, 2024.

Land Use and Planning

Issues (and Supporting Information Sources):		*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
XI.	**LAND USE AND PLANNING —** Would the project:				
a)	Physically divide an established community?	☐	☐	☐	☒
b)	Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☒	☐	☐

Discussion

a) Project construction and operation would occur within the approximately 13.3-acre project site, in a rural area of Colusa County. The nearest established community is the City of Colusa approximately 3.5 miles south of the project site. The project site has historically been used for agricultural purposes and the proposed project entails planting native habitat, with sheep grazing during long term operations as part of vegetation management. Surrounding land uses include riparian, agriculture, an agricultural processing plant, and a conservation easement. Therefore, the proposed project would be consistent with surrounding land uses and would not physically divide an established community. **No impact** would occur.

b) The project site is zoned as River Frontage (R-F) and is designated under the Colusa County General Plan as Designated Floodway. Surrounding parcels are zoned Exclusive Agriculture (E-A) and are designated as Agricultural General in the Colusa County General Plan Land Use Element (Colusa County 2012 and 2019).

The Designated Floodway land use designation is considered an open space use in the General Plan. The Designated Floodway designation is applied to lands that have been designated as floodways by the Central Valley Flood Protection Board. Allowed uses within the Designated Floodway land use designation include passive recreation and open space (e.g., wildlife and habitat preserves), cultivated agriculture, livestock grazing, and resource production (e.g. timber).

The Colusa County General Plan (2012) includes several policies related to open space, land conservation, and agriculture applicable to the proposed project:

> **Policy OSR 1-3:** Support the preservation of open space consistent with this General Plan, via acquisition of fee title or easements by land trusts, government agencies, and conservancies from willing landowners, subject to the standards identified in Policy CON 1-3.
>
> **Policy CON 1-3:** Lands that are actively managed or placed under conservation easement for habitat, wetlands, species, or other natural resource or open space preservation or conservation shall be limited to lands designated Resource Conservation (RC), unless the conditions identified in Policy AG 1-14 are met.

Habitat and/or wildlife easements proposed in Colusa County for the loss of open space or habitat in other jurisdictions will not be recognized and are not acceptable unless the easement meets all of the following criteria:

- Prior notification to Colusa County;
- Consistency with the goals and policies of the Colusa County General Plan, particularly as related to planned growth, infrastructure, and agricultural preservation;
- Compensation to Colusa County for all lost direct and indirect revenue;
- Compatible with neighboring land uses;
- Located outside of urban and urban reserve areas;
- Secured water rights and infrastructure to economically maintain the proposed mitigation use;
- Requirements that existing agricultural operations continue to be farmed for commercial gain;
- Requirements that habitat management practices do not adversely impact adjacent agricultural operations;
- Prioritize purchase of mitigation credits by local developers; and
- Accommodation of recreational uses or public access, where appropriate.

Policy AG 1-14: Resource conservation activities such as habitat creation and active habitat or species management on lands designated for agricultural uses shall require a General Plan Amendment to Resource Conservation unless all of the following conditions are met:

a) The resource conservation activities involve active and on-going agricultural activities on the majority of the site.

b) The resource conservation activities are compatible with agricultural activities on the site and existing or potential agricultural activities in the vicinity.

c) There would not be a concentration of resource conservation lands in the immediate area.

If the above conditions are met, the resource conservation activities shall require a Conditional Use Permit.

An important consideration of Policy CON 1-3 is the requirement that compensation be provided to Colusa County for all lost direct and indirect revenue. The issue that resulted in the adoption of this General Plan requirement is that productive agricultural land in the County is being lost for habitat mitigation banks that are being developed to provide mitigation for development projects outside of the County. As a result, agricultural production and the resulting economic benefits to the County is being lost in favor of the economic benefits from development activity in jurisdictions outside of the County.

In order to provide the compensation to the County required by Policy CON 1-3, the Board has previously entered into mitigation bank credit reservation and discount agreements with mitigation bank developers. In order to be consistent with these past actions and address the requirements of Policy CON 1-3, **Mitigation Measure LU-1** (below) specifies that the County's Use Permit approval will include a condition that a mitigation bank reservation and credit agreement with the County of Colusa be entered into.

The proposed project would, to an extent, involve ongoing agricultural activities (grazing) and would be compatible with agricultural activities in the vicinity and would not adversely affect those agricultural activities. Surrounding land uses include agriculture row crops to the north, the Sacramento River to the south and west, an agricultural processing plant to the east, and a CDFW conservation easement to the east and south of the processing plant. The habitat that would be planted with the proposed project would be the same plant composition that already occurs in the riparian habitat along the Sacramento River and the CDFW conserved land to the east. All of the species that may use the project site are already in the vicinity and utilizing the existing habitat; therefore, no additional wildlife or other species are anticipated to be attracted to that habitat that are not already present in the vicinity. Sheep grazing would be included on the project site during long term operations as part of vegetation management and temporary fencing would be installed to keep the sheep within the project site.

Managed areas for habitat and wildlife conservation in the vicinity of the project site include the CDFW Hamilton Bend Conservation Easement immediately southeast of the project site, Delevan National Wildlife Refuge approximately 3.5 miles northwest of the project site, Butte Sink Wildlife Management Area approximately 4 miles southeast of the project site, and the Colusa National Wildlife Refuge approximately 5.2 miles to the southwest. Relative to Policy AG 1-14(c) there is not considered to be a concentration of conservation lands in the area.

With the approval of a Use Permit from Colusa County prior to project implementation, the proposed project would be consistent with applicable sections of the Colusa County General Plan and zoning ordinance. For these reasons, the proposed project would not cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect and this impact would be **less than significant**.

Mitigation Measures

Mitigation Measure LU-1: Mitigation Bank Credit Reservation and Discount

A condition of approval shall be required in County's Use Permit approval that a mitigation bank credit and reservation agreement be entered into with the County of Colusa in order for the Use Permit to become effective. The terms of this agreement shall include discounts for the County's purchase of mitigation credits generally consistent with the recent Mitigation Bank Reservation and Discount Agreements, and shall be mutually acceptable to the County and WES and shall specify the number of credits reserved for the County, the discount amount, the amount of time of the reservation, and other applicable factors detailed in said agreement.

References

Colusa County. 2012. Colusa County General Plan. Adopted July 31, 2013. Available: https://www.countyofcolusa.org/137/General-Plan. Accessed February 5, 2024.

———. 2019. Colusa County Zoning Map. July 2019. Available: https://www.countyofcolusa.org/DocumentCenter/View/4468/Adopted-Countywide-Zoning-Map_Current-to-July-2019?bidId=. Accessed February 5, 2024.

Mineral Resources

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
XII. MINERAL RESOURCES — Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☐	☒

Discussion

a, b) The subject property is not located within an area classified as a mineral resource by the State Geologist (USGS 2024). Given that the project site is neither located in or near a mineral resource recovery site, nor is it located in an area of regional significance, there would be no loss of availability of a known mineral resource. There would be **no impact** under this criterion.

References

United States Geological Survey (USGS). 2024. *Mineral Resources On-Line Spatial Data Interactive Map*. Availablehttp://mrdata.usgs.gov/general/map.html. Accessed February 21, 2024.

Noise

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
XIII. NOISE — Would the project result in:				
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Discussion

a, b) The subject property is located in a rural setting where surrounding areas include agriculture and agricultural processing, a conservation easement, and the Sacramento River. There are no residences or other sensitive receptors within vicinity to the project site. Project construction activities could result in a temporary minor increase in ambient noise levels and vibration in the vicinity of the project site but would result in no permanent increase in ambient noise levels in the vicinity of the proposed project. Impacts would be **less than significant**.

c) The project site is not located within an airport land use plan and there are no airports located within 2 miles of the project site; therefore, there would be **no impact**.

Population and Housing

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
XIV. POPULATION AND HOUSING — Would the project:				
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Discussion

a) The proposed project would not include any new residential development or other infrastructure that would either directly or indirectly induce substantial unplanned population growth in the project area. Construction and operation of the proposed project would generate a minimal number of workers to the project site. Therefore, the proposed project would not induce unplanned population growth and there would be **no impact**.

b) The proposed project would not displace any existing housing or people and it does not involve the construction of new housing Therefore, **no impact** would occur.

Public Services

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
XV. PUBLIC SERVICES —				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services:				
i) Fire protection?	☐	☐	☐	☒
ii) Police protection?	☐	☐	☐	☒
iii) Schools?	☐	☐	☐	☒
iv) Parks?	☐	☐	☐	☒
v) Other public facilities?	☐	☐	☐	☒

Discussion

a) The proposed project does not include the construction of residential or commercial structures, resulting in no substantial population growth in the area. The proposed project would not create the need for governmental facilities and would not increase the need for police protection, schools, parks or other public facilities. Therefore, **no impact** would occur.

Recreation

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
XVI. RECREATION —				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

Discussion

a, b) The proposed project does not include any recreational facilities. The proposed project would not result in substantial population growth and would not increase the use of any existing neighborhoods or regional parks or cause the need for expansion of recreational facilities. Therefore, **no impact** would occur.

Transportation

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
XVII. TRANSPORTATION — Would the project:				
a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☐	☒
b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	☒	☐
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
d) Result in inadequate emergency access?	☐	☐	☐	☒

Discussion

a) The proposed project would not result in substantial population growth or associated increases in traffic. As a result, the proposed project would not conflict with any circulation plans or policies. **No impact** would occur.

b) CEQA Guidelines Section 15064.3, subdivision (b) pertains to criteria for determining the significance of transportation impacts, with a primarily focus on projects within transit priority areas. Vehicle miles traveled, or VMT, is a measure of the total number of miles driven to or from a development and is sometimes expressed as an average per trip or per person.

Section 15064.3 of the CEQA Guidelines suggests that the analysis of VMT impacts applies mainly to land use and transportation projects. Furthermore, projects that generate or attract fewer than 110 operational trips per day would generally be exempt from further consideration with respect to VMT and impacts are assumed to be less than significant. Per this guidance, since the proposed project would not generate significant additional traffic, is not a transportation project, and would generate minimal trips for maintenance activities, it can be assumed to have a **less than significant** impact with respect to VMT.

c) The proposed project would use existing site access off River Road and would not introduce any new intersections or adjusted roadway geometry that would have the potential to introduce hazardous driving conditions. **No impact** would occur.

d) The existing road would continue to provide adequate emergency access to the project site, resulting in **no impact**. Refer to **Section IX (Hazards and Hazardous Materials)**, for additional discussion related to emergency access.

Tribal Cultural Resources

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
XVIII. TRIBAL CULTURAL RESOURCES —				
a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources. Code Section 5020.1(k), or	☐	☐	☒	☐
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☐	☒	☐

Discussion

a) As discussed in **Section V (Cultural Resources)**, the cultural resources investigation for the property identified one archaeological resource (a single isolate); however, ESA's review of the resource's mapped location in 2023 resulted in a determination the resource was mapped just outside the property on a parcel not owned by WES.

In December 2023, ESA sent an email to YDWN providing details, including a map, of the proposed project and requesting that the Tribe provide any concerns they may have regarding potential impacts from the proposed project on cultural resources and tribal cultural resources. The email also invited the Tribe to participate in a site visit to the property to discuss the proposed project and any concerns the Tribe may have. YDWN replied to ESA the same month via email and letter, requesting engagement on the proposed project and additional information its associated cultural resources study. On January 19, 2024, representatives from YDWN, WES, and ESA conducted a site visit at the property. During the visit, details on the proposed project and InContext's cultural resources study were discussed. Additionally, YDWN and ESA representatives conducted an intensive-level pedestrian survey of the portion of the property in the vicinity of the archaeological resource identified by InContext just outside the property on a parcel not owned by WES. During the survey, no archaeological resources or indications thereof were observed in the property, and YDWN and ESA concluded that the archaeological resource identified by InContext may, in fact, represent an imported gravel used for surfacing the adjacent levee. YDWN stated that they had no concerns regarding impacts on tribal cultural resources from the proposed project. YDWN's only recommendations were that a Tribal Resources Sensitivity Training be conducted for

project construction personnel prior to implementation of the proposed project and that Cachil Dehe be contacted regarding the proposed project to see if they have any concerns regarding potential impacts on cultural resources or tribal cultural resources. In February 2024, ESA sent an email to the Cachil Dehe that provided details, including a map, of the proposed project and requested that the Tribe provide any concerns they may have regarding potential impacts from the proposed project on cultural resources or tribal cultural resources. To date, ESA has not received any reply from Cachil Dehe. The recommended Tribal Resources Sensitivity Training is included in **Mitigation Measure CUL-1**, refer to **Section V (Cultural Resources)**.

In addition to the early consultation with the Cachil Dehe Band of Wintun Indians as discussed above, Colusa County processed the AB 52 notification using the contact list maintained by the NAHC. In addition, this notification also included those tribes that had previously requested to be notified. No request for formal notification was made.

In summary, no tribal cultural resources, as defined in Public Resources Code Section 21074, have been identified that could be impacted by the proposed project. However, to protect potential previously unidentified archaeological resources or human remains that may qualify as tribal cultural resources, **Mitigation Measures CUL-1** and **CUL-2** would be implemented. Therefore, impacts on tribal cultural resources are anticipated to be **less than significant with mitigation incorporated**.

Mitigation Measures

Mitigation Measure CUL-1 and CUL-2 (refer to Section V (Cultural Resources)

References

Fernandez, Trish. 2022 (September). Cultural Resources Study Report, Hamilton Bend Property. InContext, Sacramento, CA. Prepared for Westervelt Ecological Services, Sacramento, CA.

Utilities and Service Systems

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
XIX. UTILITIES AND SERVICE SYSTEMS — Would the project:				
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☐	☒
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☒	☐
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☐	☒
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☐	☒

Discussion

a) The proposed project would be limited to providing suitable habitat for VELB with a shrub-dominated riparian habitat. Relocation or construction of new or expanded water, wastewater treatment, stormwater drainage, electric power, natural gas, or telecommunication facilities are not included as components of the proposed project. Additionally, as previously discussed, the proposed project would not contribute to population growth resulting in the need for expanded utilities. Therefore, there would be **no impact**.

b) The proposed project would not require or result in the relocation or construction of any new or additional sources of water. The main irrigation system that is currently in place on the property would be used to drip irrigate the elderberry and native plantings. The water source would be the existing agricultural well on site. The VELB habitat would only be irrigated long enough to establish the plants. Irrigation of the plantings would taper and ultimately be discontinued within five years after planting. The amount of irrigation water used would be less than when the project site was planted as a walnut orchard. For these reasons, the impact would be **less than significant**.

c) Construction, operation, and maintenance of the proposed project would not result in an increase in population and would not require temporary or permanent wastewater treatment. The proposed project would not affect the wastewater treatment capacity, and there would be **no impact**.

d, e) The proposed project would not generate solid waste in excess of State or local standards or impair the attainment of solid waste reduction goals. The proposed project would also comply with applicable regulations related to solid waste. Therefore, **no impact** would occur.

Wildfire

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
XX. WILDFIRE — If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☒	☐
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	☒
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☒

Discussion

a-d) Project construction and operation would not require any road closures and would not substantially increase traffic in the area compared to current conditions. Existing roads would continue to provide adequate emergency access to the project site. The proposed project also does not include any infrastructure that would exacerbate fire risk. In addition, annual vegetation maintenance would remove fuel loading and reduce wildfire risks. Although the proposed project would alter land cover, erosion control BMPs would be implemented for the proposed project (as described in Section 8) which would reduce the likelihood of runoff or drainage changes being discharged on or offsite, and given the project site's relatively flat topography, no structures or people would be exposed to downslope or downstream flooding or landslides.

The proposed project is not located in or near a State Responsibility Area or lands classified as a Very High Fire Hazard Severity Zone (CAL FIRE 2023). Therefore, **no impact** related to wildfire in or near State Responsibility Areas or lands classified as Very High Fire Hazard Severity Zone would occur.

References

CAL FIRE. 2023. Fire Hazard Severity Zones in State Responsibility Area. Available: https://calfire-forestry.maps.arcgis.com/apps/webappviewer/index.html?id=988d431a42b242b29d89597ab693d008. Accessed April 24, 2024.

Mandatory Findings of Significance

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
XXI. MANDATORY FINDINGS OF SIGNIFICANCE —				
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☒	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

Discussion

a) As discussed in this Initial Study, implementation of the proposed project along with the incorporation of the identified mitigation measures and BMPs identified in the Project Description, would not have the potential to significantly degrade the quality of the environment (see **Section II [Biological Resources] and Section III [Cultural Resources]**). Impacts would be **less than significant with mitigation incorporated**.

b) The evaluation of cumulative impacts considers the locations of potential impacts of the proposed project relative to the geographic extent of other past, present, and reasonably foreseeable future projects with which it may be combined. No other projects in the project area were identified as past, present, and reasonably foreseeable future projects. While construction and operation of potential future projects in the project area could result in a cumulatively significant impact, considering the limited scope and scale of the proposed project, the project site's characteristics, and the surrounding environment, the proposed project along with the incorporation of the identified mitigation measures and BMPs identified in the Project Description, would reduce the contribution of the proposed project to cumulative impacts to less than cumulatively considerable, and cumulative impacts would be **less than significant**.

c) Implementation of the proposed project would not have any potentially significant negative effects on human beings. The proposed project and the use of the project site would be at a level of intensity considered normal and reasonable for a property within a River Frontage zoning district. Therefore, **less-than-significant** impacts on human beings are anticipated.

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Appendix A

Hamilton Bend Biological Resources Assessment

RECONNAISSANCE–LEVEL BIOLOGICAL RESOURCES ASSESSMENT AT THE HAMILTON BEND MITIGATION SITE, COLUSA COUNTY, CALIFORNIA

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November 2022

ACRONYMS AND ABBREVIATIONS

amsl	above mean sea level
ATV	All-terrain vehicle
CAL-IPC	California Invasive Plant Council
CCA	California Coastal Act
CCC	California Coastal Commission
CCR	California Code of Regulations
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
CESA	California Endangered Species Act
CEQA	California Environmental Quality Act
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
CWA	Clean Water Act
e.g.,	Example
et al.	And others
etc.	Etcetera
et seq.	And what follows (used in page references)
EPA	Environmental Protection Agency
ESA	Federal Endangered Species Act
ESHA	Environmentally Sensitive Habitat Areas
F	Fahrenheit
FAC	Facultative
FACU	Facultative upland
FACW	Facultative wetland
FR	Federal Register
GIS	Geographic Information System
GPS	Global Positioning System
HBC	Helm Biological Consulting
i.e.,	that is to say (used to explain)
Inc.	Incorporated

ITP	Incidental Take Permit
LLC	Limited Liability Corporation
MBTA	Migratory Bird Treaty Act
NAD83	North American Datum of 1983
NL	Not listed
NMFS	National Marine Fisheries Service
NRCS	Natural Resources Conservation Service
NWI	National Wetland Inventory
°	Degree
OBL	Obligate
OHWM	Ordinary high-water mark
RWQCB	Regional Water Quality Control Board
SAA	Streambed Alteration Agreement
Sec.	Section
Site	Hamilton Bed Mitigation Site
sp.	Species - singular
ssp.	Species - plural
Subd.	Subdivision
SWPPP	Storm Water Pollution Prevent Plan
SWRCB	State Waters Resources Control Board
UPL	Upland
US	United States
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WES	Westervelt Ecological Services, LLC
WGS84	World Geodetic System 1984
VegCAMP	Vegetation Classification and Mapping Program

INTRODUCTION

Helm Biological Consulting (HBC), a division of Tansley Team, Inc., was contracted by Westervelt Ecological Services, LLC (WES) to conduct a reconnaissance-level biological resource assessment at the Hamilton Bend Mitigation Site (hereafter "Site'). The Site is being evaluated by WES as potential mitigation lands.

SITE LOCATION

The Site consists of roughly 235-acres, is bounded by River Road to the north and the Sacramento River to the west, south and east; and occurs approximately 3.5 miles north of the city of Colusa, Colusa County, California (Figure 1). More specifically, the Site occurs in the southwest ¼ of Section 31, Township 17 North, and Range 1 West and the northwest ¼ of Section 6, Township 16 North, Range 1 West, and Mount Diablo Base & Meridian on the Moulton Weir U.S. Geologic Survey (USGS) 7.5-minute quadrangle map (Figure 2). Approximate center coordinates in decimal degrees (North American Datum of 1983 [NAD83]) are Latitude: 39.27341° and Longitude: -121.01604°.

DEFINITIONS

Several terms relating to biological resources used in the report are described briefly below.

COMMUNITY- A community is an assemblage of populations of plants, animals, bacteria, and fungi that live in an environment and interact with one another, forming a distinctive living system with its own composition, structure, environmental relationships, development, and functions (Whittaker 1975).

HABITAT- Habitat is the place or type of site where a plant or animal naturally or normally lives and grows.

SENSITIVE NATURAL COMMUNITY - Sensitive natural communities are communities that are of limited distribution statewide or within a county or region and are often vulnerable to environmental effects of projects. These communities may or may not contain special-status plants or their habitat (CDFW 2018). A sensitive community has particularly high ecological value or functions and is considered important because its degradation or destruction could threaten populations of dependent plant and wildlife species and significantly reduce the regional distribution and viability of the community.

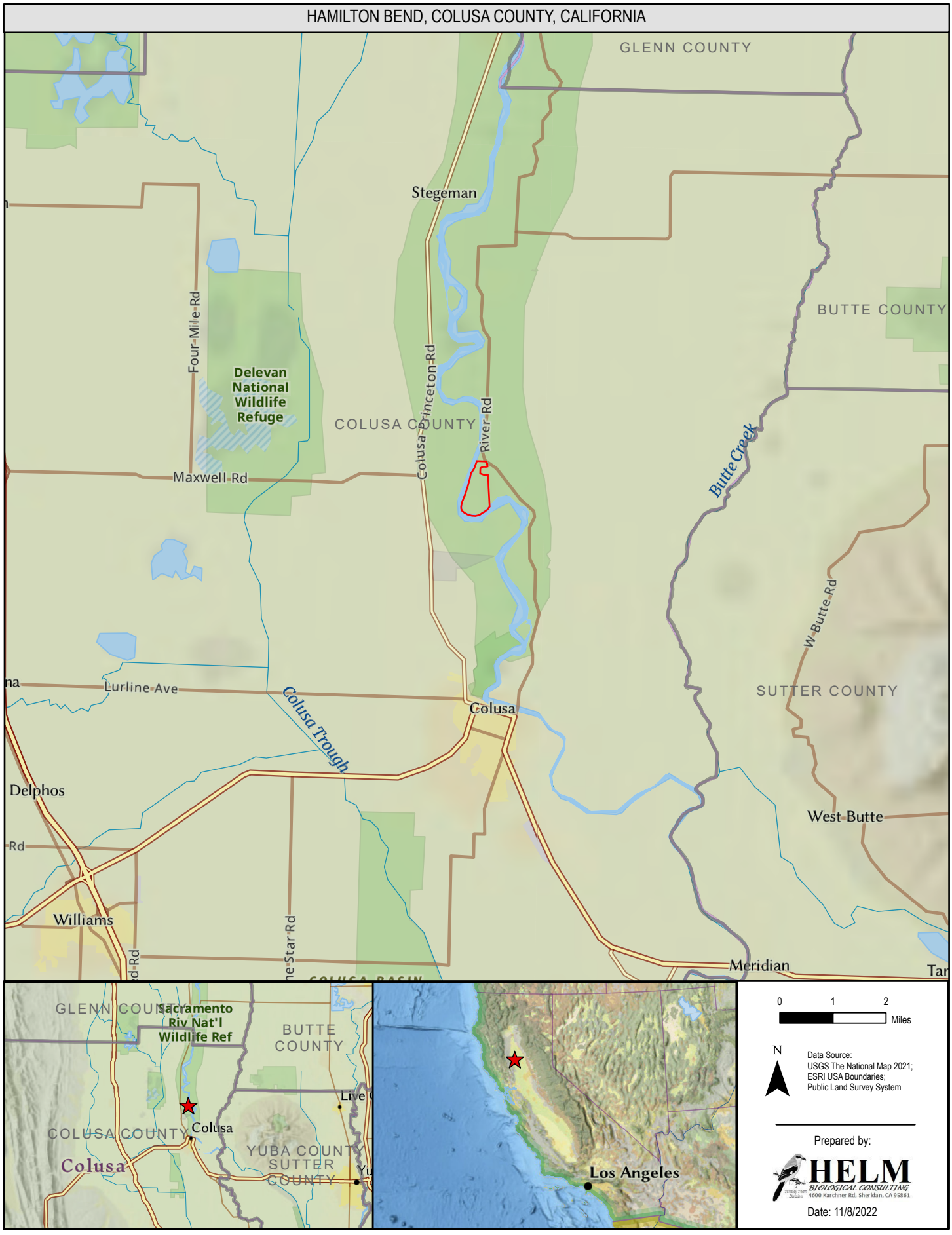
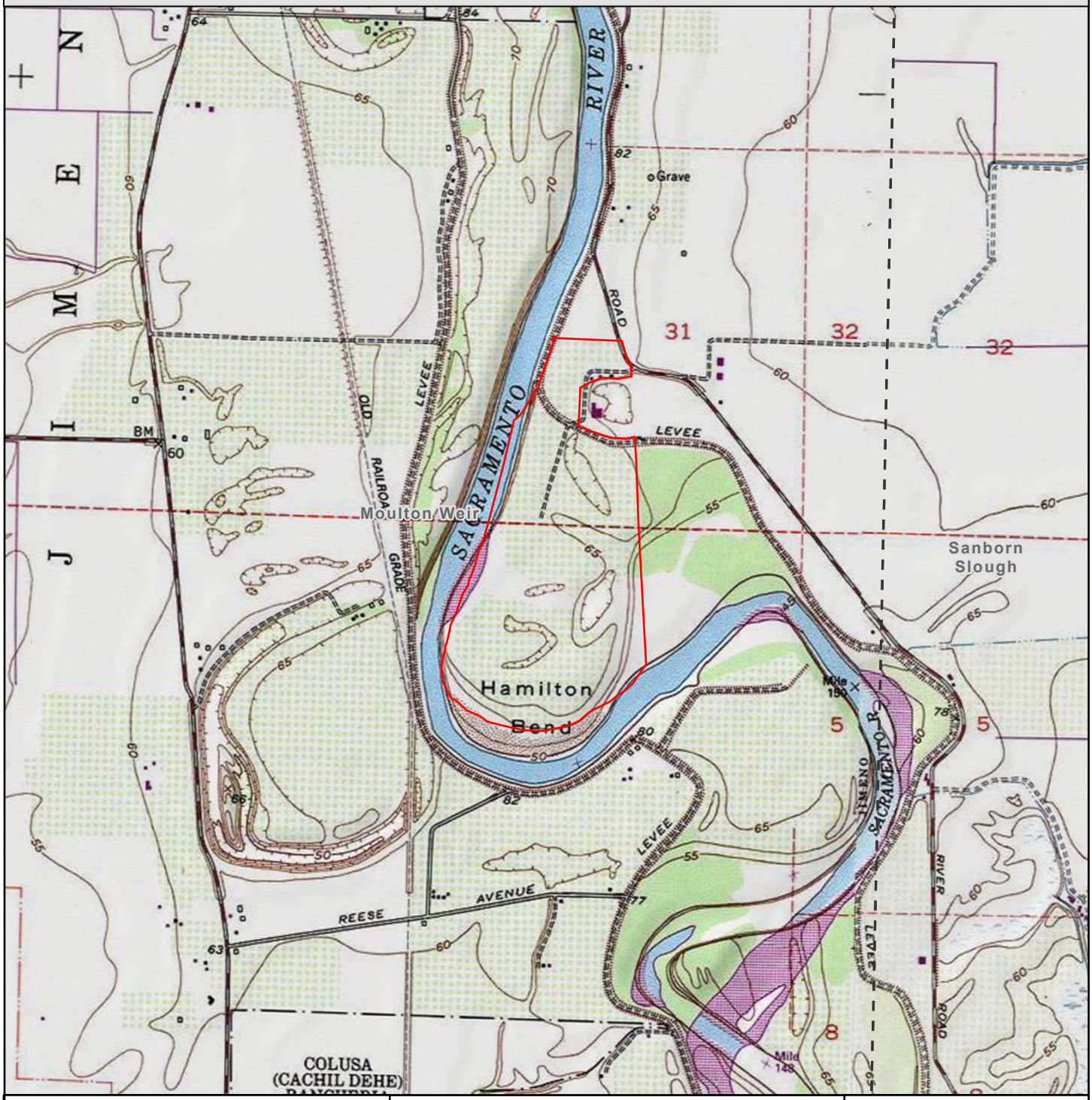


Figure 1. Site Vicinity

HAMILTON BEND MITIGATION SITE, COLUSA COUNTY, CALIFORNIA



Site Boundary (235 acres)

USGS 24k Topo Map Boundaries

The Site is located within the Moulton Weir, CA USGS 7.5-minute quadrangle map.

The Site occurs within Section 31 of Township 17 North and Range 1 West and Section 6 of Township 16 North and Range 1 West, Mt. Diablo Base & Meridian.

Center Coordinates (NAD83) for Site:
Latitude 39.27341, Longitude -122.01604

0 1,000 2,000 Feet

N

Data Source:
USGS The National Map 2021;
ESRI USA Boundaries;
Public Land Survey System

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Date: 11/8/2022

Figure 2. Site Location

As the number and extent of sensitive natural communities continues to diminish, the endangerment status of dependent special-status (i.e., rare, threatened, or endangered) species could become more precarious, and populations of currently stable species (i.e., non-special-status species) could become rare. Loss of sensitive natural communities can also eliminate or reduce important ecosystem functions, such as water filtration by wetlands and bank stabilization by riparian forests or wetlands.

California Department of Fish and Wildlife's VegCAMP and the California Native Plant Society's Vegetation Program use a rank calculator to rank Natural Communities using standardized quantitative rarity and threat parameters and compute weighted scores for rarity and threats. This evaluation is done at both the Global (full natural range within and outside of California) and State (within California) levels resulting in a single G (global) and S (state) rank ranging from 1 (very rare and threatened) to 5 (demonstrably secure). The definitions of global and state rarities are the same for 1 through 5 and listed below:

- **1:** critically imperiled; at very high risk of extinction or elimination due to very restricted range, very few populations or occurrences (five or fewer known populations), very steep declines, very severe threats, or other factors
- **2:** imperiled; at high risk of extinction or elimination due to restricted range, few populations or occurrences (six to 20 extant populations), steep declines, severe threats, or other factors
- **3:** vulnerable; at moderate risk of extinction or elimination due to a fairly restricted range, relatively few populations or occurrences (21 to 100 extant populations), recent and widespread declines, threats, or other factors
- **4:** apparently secure; at fairly low risk of extinction or elimination due to an extensive range and/or many populations or occurrences (100 to 1,000 known extant populations) but with possible cause for some concern as a result of local recent declines, threats, or other factors
- **5:** secure; at very low risk or extinction or elimination due to a very extensive range, abundant populations or occurrences (1,000+ extant populations], and little to no concern from declines or threats

Natural Communities with ranks of S1-S3 are considered Sensitive Natural Communities to be addressed in the environmental review processes of CEQA and its equivalents. (CDFW 2022b).

SPECIAL-STATUS SPECIES - Special-status species are generally defined as species that are assigned a status designation indicating possible risk to the species. These designations are assigned by state and federal resource agencies (e.g., California Department of Fish and Wildlife [CDFW], U.S. Fish and Wildlife Service [USFWS]) or by private research or conservation groups (e.g., California Native Plant Society [CNPS]). Assignment to a special-status designation is typically done on the basis of a declining or potentially declining population, locally, regionally, or nationally. To what extent a species or population is at risk usually determines the status

designation. The factors that determine risk to a species or population generally fall into one of several categories, such as habitat loss or modification affecting the distribution and abundance of a species; environmental contaminants affecting the reproductive potential of a species; or a variety of mortality factors such as hunting or fishing, interference with human-made objects (e.g., collision, electrocution), invasive species, or toxins.

SPECIAL-STATUS PLANT SPECIES - For the purposes of this document, special-status plants include all those that meet one or more of the following criteria:

- Listed or proposed for listing as threatened or endangered under the federal endangered Species Act (ESA) or candidates for possible future listing as threatened or endangered under the ESA (50 Code of Federal Regulations [CFR], § 17.12).
- Listed or candidates for listing by the State of California as threatened or endangered under California Endangered Species Act (CESA) (Fish & Game Code, § 2050 et seq.). In CESA, "endangered species" means a native species or subspecies of plant which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease (Fish & Game Code, § 2062). "Threatened species" means a native species or subspecies of plant that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts required by CESA (Fish & Game Code, § 2067). "Candidate species" means a native species or subspecies of plant that the California Fish and Game Commission has formally noticed as being under review by CDFW for addition to either the list of endangered species or the list of threatened species, or a species for which the California Fish and Game Commission has published a notice of proposed regulation to add the species to either list (Fish & Game Code, § 2068).
- Listed as rare under the California Native Plant Protection Act (Fish & Game Code, § 1900 et seq.). A plant is rare when, although not presently threatened with extinction, the species, subspecies, or variety is found in such small numbers throughout its range that it may be endangered if its environment worsens (Fish & Game Code, § 1901).
- Meet the definition of endangered, rare, or threatened species under CEQA Guidelines section 15380, subdivisions (b) and (d), which may include:
    - Plants tracked by the California Natural Diversity Database (CNDDB) as California Rare Plant Rank (CRPR) 1 or 2; and
    - Plants that may warrant consideration on the basis of declining trends, recent taxonomic information, or other factors. This includes plants tracked by the CNDDB as CRPR 3 or 4.
- Considered locally significant plants, that is, plants that are not rare from a statewide perspective but are rare or uncommon in a local context such as within a county or region (California Environmental Quality Act [CEQA] Guidelines, § 15125, subd. [c]), or as

designated in local or regional plans, policies, or ordinances (CEQA Guidelines, Appendix G). Examples include plants that are at the outer limits of their known geographic range or plants occurring on an atypical soil type.

SPECIAL-STATUS WILDLIFE SPECIES - For purposes of this report, special-status wildlife species are generally defined as follows:

- Species that are listed or proposed for listing as threatened or endangered under the federal ESA (50 CFR 17.11 [listed animals] and various notices in the Federal Register (FR) [proposed species])
- Species that are candidates for possible future listing as threatened or endangered under the ESA (70 FR 24870-24934, May 11, 2005), or as species of special concern designated by the National Marine Fisheries Service (NMFS)
- Species that are listed or proposed for listing under the CESA (California Fish and Game Code 1992 Sections 2050 *et seq*.; 14 California Code of Regulations [CCR] Sections 670.1 *et seq*.)
- Species that are designated as species of special concern by the CDFW
- Species that are designated as fully protected by CDFW (California Fish and Game Code, Section 3511 [birds], 4700 [mammals], 5050 [Reptiles and amphibians], and 5515 [fish])
- Species that meet the definition of rare or endangered under CEQA (14 CCR Section 15380)

WATER OF THE UNITED STATES - The term waters of the United States means:

1. All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
2. All interstate waters including interstate wetlands;
3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:
    I. Which are or could be used by interstate or foreign travelers for recreational or other purposes; or
    I. From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
    II. Which are used or could be used for industrial purposes by industries in interstate commerce;

4. All impoundments of waters otherwise defined as waters of the United States under this definition;
5. Tributaries of waters identified in paragraphs (s)(1) through (4) of this section;
6. The territorial sea;
7. Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (s)(1) through (6) of this section; waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of Clen water Act (CWA) (other than cooling ponds as defined in 40 CFR 423.11(m) which also meet the criteria of this definition) are not waters of the United States.

WETLANDS - For the purposes of this document wetlands are a subset of Waters of the United States and defined as transitional areas between aquatic habitats and upland habitats and generally include habitats such as marshes and swamps.

Under the U.S. Army Corps of Engineers (USACE) jurisdiction, wetlands generally must possess the following three mandatory criteria: 1) A prevalence or dominance of hydrophytes (water-loving plants); 2) Hydric soils (e.g., waterlogged soils); and 3) Wetland hydrology (i.e., soils that are inundated or saturated to the surface for extended periods during the growing season).

Pursuant to the California Coastal Act (CCA), the California Coastal Commission (CCC) only requires evidence of a single parameter to establish wetland conditions:

> Wetland shall be defined as land where the water table is at, near, or above the land surface long enough to promote the formation of hydric soils or to support the growth of hydrophytes, and shall also include those types of wetlands where vegetation is lacking and soil is poorly developed or absent as a result of frequent and drastic fluctuations of surface water levels, wave action, water flow, turbidity or high concentrations of salts or other substances in the substrate. Such wetlands can be recognized by the presence of surface water or saturated substrate at some time during each year and their location within, or adjacent to, vegetated wetlands or deep-water habitats (CCR Title 14 Section 13577).

WATERS OF THE STATE - According to Section II of California's *State Policy for Water Quality Control: State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State*, the Water Boards define an area as *wetlands* as follows:

> An area is wetland if, under normal circumstances, (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both; (2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and (3) the area's vegetation is dominated by hydrophytes or the area lacks vegetation.

Waters of the state are defined broadly in the Porter-Cologne Water Quality Control Act and include:

> … "any surface water or groundwater, including saline waters, within the boundaries of the state." "Waters of the state" includes all "waters of the U.S." The following wetlands are waters of the state:
>
> 1. Natural wetlands,
>
> 2. Wetlands created by modification of a surface water of the state, and
>
> 3. Artificial wetlands…

WILDLIFE - For the purposes of this document wildlife includes mammals, birds, reptiles, amphibians, fish, and invertebrates.

REGULATORY PROTECTION OF SPECIES AND HABITATS

CLEAN WATER ACT SECTIONS 401, 402, AND 404

Section 404 of the CWA protects waters of the U.S., including wetlands and drainages, by requiring projects that would discharge dredge or fill material into them to obtain a permit or authorization from the USACE. The permitting program is designed to minimize the fill of waters of the United States (U.S.) and when impacts cannot be avoided, require compensatory mitigation.

Section 401 of the CWA requires any applicant for a federal license or permit that could result in any discharge into a navigable water (i.e., USACE permit to fill wetlands), to obtain water quality certification from the Regional Water Quality Control Board (RWQCB).

Section 402 of the Clean Water Act requires projects that disturb 1 acre or more or are part of a larger project to notify the State Water Resources Control Board (SWRCB) and to prepare a Storm Water Pollution Prevention Plan (SWPPP) that will minimize construction and storm water related impacts to waterways.

Because the RWQCB accepts the USACE definition of wetlands, delineations from a final USACE-verified aquatic resource report can be used to determine the extent of wetlands and waters of the State. Any wetlands or waters not delineated in the USACE-verified report would be performed in a similar method to delineations of federal wetlands and waters to determine additional water of the State.

PORTER-COLOGNE WATER QUALITY ACT

The Porter-Cologne Water Quality Act extends the RWQCB jurisdiction over waters of the State, which defines waters of the State as any surface water or groundwater, including saline waters, within the boundaries of the State (California Water Code Section 13050[e]). In the absence of CWA Section 404 jurisdiction over isolated waters or other waters of the State, California retains authority to regulate discharges of wastes into any waters of the State.

CALIFORNIA COASTAL ACT

The CCA requires that most development avoid and buffer wetland resources. Policies include:

- Section 30231, which requires the maintenance and restoration (if feasible) of the biological productivity and quality of wetlands appropriate to maintain optimum populations of marine organisms and for the protection of human health.

- Section 30233, which limits the filling of wetlands to identified high priority uses, including certain boating facilities, public recreational piers, restoration, nature study, and

incidental public services (such as burying cables or pipes). Any wetland fill must be avoided unless there is no feasible less environmentally damaging alternative, and authorized fill must be fully mitigated.

CALIFORNIA DEPARTMENT OF FISH AND GAME CODE SECTIONS 1600-1607

Under California Fish and Game Code (CFGC) Sections 1600–1607, CDFW may enter into a Streambed Alteration Agreement (SAA) with an applicant if a project would divert, obstruct, or change the natural flow of the bed, channel, or bank of any river, stream, or lake. Through an SAA, CDFW can develop mitigation measures with applicants who propose projects that would obstruct the flow of, or alter the bed, channel, or bank of, a river, stream, or lake in which there is a fish or wildlife resource, including seasonal drainages.

MIGRATORY BIRD TREATY ACT AND CALIFORNIA FISH AND GAME CODE SECTIONS 3503.5, 3511, AND 3513

The federal Migratory Bird Treaty Act (MBTA) (16 USC, Sec. 703, 1989) prohibits killing, possessing, or trading migratory birds except in accordance with regulations prescribed by the Secretary of the Interior. This act encompasses whole birds, parts of birds, bird nests, and eggs. The MBTA is administered by the USFWS and special permits from the agency are generally required for the take of any migratory birds. This act applies to all persons and agencies in the U.S., including federal agencies. Under CFGC, eggs and nests of all birds are protected from take under CFGC Section 3503. Raptors and raptor nests or eggs are protected from take under CFGC Section 3503.5. Migratory birds are expressly prohibited from take under CFGC Section 3513 and species designated by the CDFW as fully protected species are protected from take under CFGC Sections 3511, 4700, 5050, and 5515.

FEDERAL AND STATE ENDANGERED SPECIES ACTS

The USFWS and CDFW are the federal and state agencies, respectively, responsible for the protection of endangered and threatened plants, fish, and wildlife and for the regulation of activities that could affect those species. The regulatory vehicles that protect sensitive species are administered by these two agencies and include the ESA and CESA.

Section 7 of the federal ESA provides a means for authorizing incidental take of federally endangered or threatened species that result from federally conducted, permitted, or funded projects. Similarly, Section 10 authorizes incidental take of federally endangered or threatened species by non-federal agencies.

In exchange for habitat conservation and other commitments, the USFWS and CDFW will each issue an Incidental Take Permit (ITP) that grants take for Covered Species resulting from the implementation of Covered Activities, including urban development and infrastructure construction and maintenance activities. The entities that receive take coverage under the ITPs are

exempt from take prohibitions of Section 9 of the federal ESA for "take" of Covered Species incidental to otherwise legal activities.

This remainder of this report describes the methods and results of the reconnaissance-level biological resource assessment at the Site.

METHODS

To determine if the Site supports special-status species and/or suitable habitat for special-status species or other sensitive biological resources (sensitive habitats such as wetlands), a two-phase approach was conducted which included a pre-field survey and follow up field surveys, described below.

DATA COMPILATION

Prior to conducting field surveys, an investigation was conducted to identify sensitive biological resources with potential to occur on Site. Several data sources were reviewed, including:

- A records search of CDFW, CNDDB and the CNPS Inventory of Rare and Endangered Plants Database of the Moulton Weir USGS 7.5-minute topographic quadrangle map, to determine whether any special-status plants or wildlife had been reported onsite or within a 5-mile radius of the Site (CDFW 2022a and CNPS 2022).
- An Information for Planning and Consulting species list for the Site generated by the USFWS Environmental Conservation Online System (USFWS 2022a).
- USFWS (2022b) National Wetland Inventory (NWI) maps for aquatic features.
- Soils information from the US Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) Web Soil Survey (NRCS 2022a).
- Soils information from the NRCS (2022b) Web Soil Survey.
- General topography from the Moulton Weir USGS 7.5-minute topographic quadrangle map.
- Watershed Hydrologic Unit Code (HUC) maps.
- Precipitation data and seasonal temperature data from Best Places (2022).
- Google Earth© (2022) images.
- Site descriptions provided by WES.

A list of special-status plant and wildlife species known from the vicinity of the Site was developed based on the review of existing information and used to focus the site investigation on the special-status species and associated communities or habitats with potential to be present in the area, described below under Special-status Special Habitat Assessment section.

FIELD SURVEY

Surveys were conducted onsite by Dr. Brent Helm and Ms. Rachel Powell of HBC on July 8, 2022. Surveys focused on:

- Describing and mapping common and sensitive communities/habitats present.
- Identifying special-status and common plant and wildlife species' occurrences.
- Conducting an assessment of habitat types present for suitability to support special-status species.

Areas potentially qualifying as Waters of the U.S. or State, including wetlands, were also mapped. Specific methods are described below under appropriate headers.

HABITAT MAPPING

HBC biologists either walked or rode on an all-terrain vehicle (ATV) to cover the entire Site. All vegetation communities were mapped, including wetlands either on aerial photographic base maps or using a handheld Trimble GeoX7 GPS unit with sub-meter accuracy. GPS data was collected in Zone 2 of the California State Plane Coordinate System using the NAD83 Datum. Wetland and upland habitat types were classified based on dominant vegetation, soil types, and hydrology.

Habitat polygons were plotted on aerial photographs using ArcGIS desktop software and attributed with a unique number, habitat type, and acreage. Acreage calculations were compiled using GIS for each habitat polygon and summed for each habitat type.

AQUATIC RESOURCES, INCLUDING WETLANDS DETERMINATION

HBC biologists conducted aquatic-resources delineation field surveys according to current state and federal guidelines to identify and map potential waters of the US and state, including wetlands, streams, and lakes, to determine the extent of regulatory jurisdiction for the RWQCB, CDFW, and CCC:

- CWA Section 401 jurisdiction includes all aquatic features under federal jurisdiction, including ephemeral, intermittent, and perennial streams as determined using ordinary high-water mark (OHWM) indicators and three parameter wetlands. In addition to federal aquatic resources, CWA Section 401 jurisdiction also includes isolated wetlands, riparian vegetation, isolated seeps and springs, and human-induced wetlands with natural conditions present.

- CDFW jurisdictional limits are usually delineated by the top of the stream or lake banks, or the outer edge of riparian vegetation –whichever is wider. CDFW jurisdiction also includes wetlands that are connected to and immediately adjacent to any stream or lake.

CCA jurisdiction includes all coastal wetlands, coastal waters, and streams. The CCA also takes jurisdiction of riparian habitat associated with aquatic resources, which are considered non-wetland Environmentally Sensitive Habitat Areas (ESHA). Surveyors conducted pre-delineation investigations by walking transects across the entire Site, where accessible, to ensure that the entire area was surveyed. Areas with hydrophytic vegetation dominance or suspected hydrology were noted and recorded using sub-meter accuracy GPS units.

Riparian vegetation within and adjacent to rivers, streams, and creeks was delineated in the field from the edge of the wetland or stream out to the stands' lateral extent, using the CDFW-CNPS protocol for rapid assessment (CDFW and CNPS 2019). The outer edge of riparian vegetation was used as the line of demarcation between riparian and upland habitats. Hydrophytic vegetation, hydric soil, and wetland hydrology data was collected to complete a rapid assessment, including OHWM. Where accessible, and when GPS accuracy allowed, aquatic features, wetland boundaries, top of bank along creeks, sampling points, and culvert locations were mapped using a sub-meter accuracy GPS unit. Wetlands were not mapped within the OHWM. All potential waters of the U.S. were classified using the Cowardin *et al* (1979) classification system.

The OHWM method was used for determining the lateral limits of non-wetland waters. Non-wetland waters are regulated under waters of the U.S. in Section 404 of the CWA (33 U.S.C. 1344) and are defined by a line on the shore established by fluctuations of water. This OHWM line is indicated by shelving, changes in sediment texture, and changes in vegetation. The OHWM method was utilized to determine waters of the US and State in non-tidal perennial and seasonal drainages. CDFW jurisdiction was determined by the "top of bank" or the "canopy (aerial cover) of riparian vegetation" which could extend farther from the OHWM.

A formal delineation of wetlands or other waters of the US or State was not conducted.

SPECIAL-STATUS SPECIES HABITAT ASSESSMENT

Special-status species and sensitive habitats identified during the pre-survey investigation as having the potential to occur within the Site were targeted during field surveys. All plant communities were surveyed to determine presence or absence of any special-status species from the list developed of special-status plant and wildlife species with potential to occur within the Site or vicinity of the Site. Additionally, any nests observed onsite were mapped with the GPS.

For species that were not identifiable at the time of the field survey, plant communities were assessed for potential to support the targeted species. The habitat assessed was based on habitat suitability comparisons with reported occupied habitats (Tables A and B in Appendix A). The following definitions were utilized:

- None – Species distribution is restricted by substantive habitat requirements which do not occur onsite; therefore, no further survey or study is necessary to determine likely presence or presumed absence of this species.

- Not Probable – Species distribution is restricted by substantive habitat requirements which are negligible onsite; therefore, it is assumed that no further survey or study is necessary to determine likely presence or presumed absence of this species.

- Low – The species has a Low probability of occurrence within the Site.

- Moderate – The species has a Moderate probability of occurrence within the Site.

- High – The species has a High probability of occurrence within the Site.

- Present – Species or species sign were observed onsite or historically has been documented onsite.

- Critical Habitat – The Site is located within a USFWS-designated critical habitat unit.

Survey methods are described below for plants and wildlife.

WILDLIFE AND PLANT OBSERVATIONS

During the field surveys for habitat mapping and special-status species habitat suitability assessments (described above) all plant and wildlife species, or sign (scat, prints, etc.), observed onsite were recorded in field notes. The notes were compiled into a complete list of all wildlife and plant species occurring onsite and within each habitat type. More specific methods are described below.

PLANT RESOURCES. The entire Site was walked using tight meandering transects and all plants observed were identified to the taxonomic level necessary to determine rarity status using *The Jepson Manual: Vascular Plants of California, 2nd Edition* (Baldwin *et al.* 2012) and internet resources such as CNPS (2022) and Calflora (2022). Scientific nomenclature follows *The Jepson Manual* (Baldwin *et al.* 2012) and updates published online by the Jepson Flora Project, Jepson Online Interchange (University of California, Berkeley 2021). Common names followed Calflora (2022). Species not readily identifiable in the field were collected and later identified using *The Jepson Manual* (Baldwin *et al.* 2012). A list of all plant species encountered during the botanical field survey was compiled. Each plant was assigned a wetland indicator status using *The National Wetland Plant List: 2016 Update of Wetland Ratings* (NWPL) (Lichvar *et al.* 2016) as follows:

- OBL - Obligate wetland plants. Almost always occur in wetlands.

- FACW - Facultative wetland plants. Usually occur in wetlands, but may occur in non-wetlands.
- FAC - Facultative plants. Occur in wetlands and non-wetlands.
- FACU - Facultative upland plants. Usually occur in non-wetlands, but may occur in wetlands.
- UPL - Obligate upland plants. Almost never occur in wetlands.

In addition, every plant was determined whether it was native, or nonnative (introduced) based on Calflora (2022). All nonnative plant species were further evaluated for any invasive status using California Invasive Plant Council (Cal-IPC 2022) ratings as follows:

- High - These species have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed ecologically.

- Moderate - These species have substantial and apparent, but generally not severe, ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal, though establishment is generally dependent upon ecological disturbance. Ecological amplitude and distribution may range from limited to widespread.

- Limited - These species are invasive but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic.

WILDLIFE RESOURCES. No protocol-level wildlife surveys were conducted as part of the habitat assessment. All wildlife species observed were identified based on HBC biologists' knowledge and following field guides: Reid (2006) for mammals, Peterson (2020) for birds, and Stebbins (2003) for reptiles and amphibians, and Gross *et al.* (2020) for insects. Common and scientific names of birds followed the Working Group on Avian Nomenclature of the International Ornithologists' Union's. Common and scientific names for reptiles and amphibians followed nomenclature of Nafis (2022) California Herps.

RESULTS

HISTORICAL SITE CONDITIONS

The Site has been altered by historic and more recent anthropogenic agricultural activities (e.g., removal of native vegetation; construction of levees; and crop production [i.e., disking/plowing, planting, irrigating, and harvesting). However, Google Earth© (2022) imagery taken from 1998 to 2022 depict the Site in a virtually identical state.

CURRENT SITE CONDITIONS

Most of the Site is used for intensive agriculture and currently dominated by orchards. The riverine habitat (Sacramento River) along the western, southern, and part of the eastern boundaries of the Site occurs offsite and is mostly utilized for farm irrigation and for recreational purposes by boaters and fishermen.

Except for vegetation communities associated with the Sacramento River and historic oxbows, the surrounding lands are agricultural consisting primarily of orchards, rice fields, row crops, and irrigated pastures (Google Earth© 2022)

CLIMATE

The Colusa area has hot, mostly dry summers and cold, wet, sometimes foggy winters. This area receives an average annual precipitation of 24 inches of rain. The average high temperature in July is 95º Fahrenheit (F) and average low temperature in January is 38º F (BestPlaces 2022).

TOPOGRAPHY AND HYDROLOGY

With the exception of levees associated with the Sacramento River and several agricultural berms (non-federal levees), the Site consists of a relatively flat piece of ground surrounded by perennial water. As previously discussed, the Sacramento River encircles the Site to the west, south and east.

Elevations onsite range from roughly 50 ft (along the Sacramento River) to 80 feet on top of berms and levees above mean sea level (msl) (Figure 2).

GEOLOGY AND SOILS

The geology within the Site is composed of Quaternary alluvium and marine deposits (Pliocene to Holocene) consisting of alluvium, lake, playa, and terrace deposits; unconsolidated and semi-consolidated (Jennings *et al.* 1977).

According to the United States Department of Agriculture (USDA) NRCS (2022a) custom soil report, the Site supports four soil map units:

- 125 Moonbend silt loam, 0 to 2 percent slopes
- 126 Moonbend silt loam, 0 to 2 percent slopes, frequently flooded
- 170 Vina loam, 0 to 2 percent slopes, frequently flooded
- 175 Tujunga loam, overwash, 0 to 2 percent slopes, frequently flooded
- 185 Riverwash (Figure 3).

Components of these five mapping units are described below in Table 1. All of these soils are associated with channels or floodplains of the Sacramento River and have major soil types or inclusions that are hydric. Each soil map unit present onsite is included on the National Hydric Soil List (NHSL) (NRCS 2022b) and described in detail in the NRCS Web Soil Survey Report, including landform position, horizon textures, depth to restrictive layer, and drainage class (NRCS 2022a).

Table 1. Hydric Soil Conditions, Percent of Components and Geographic Position of Soil Mapping Units and Associated Inclusions Mapped by NRCS at the Hamilton Bend Mitigation Site, Colusa County, California

Code	Soil Mapping Unit	Major Soil Type				Inclusions			
		Name	Percent	Hydric	Geomorphic Position	Name	Percent	Hydric	Geomorphic Position
125	Moonbend silt loam, 0 to 2 percent slopes	Moonbend	80	No	Flood plains/ toeslope	Vina	10	No	Floodplains
						Scribner	6	Yes	Floodplains
						Willows	2	Yes	Floodplains
						Unamed	1	Yes	Channels
						Colusa	1	No	Floodplains
126	Moonbend silt loam, 0 to 2 percent slopes, frequently flooded	Moonbend	80	Yes	Flood plains/ toeslope	Vina	10	Yes	Floodplains
						Tujunga	5	Yes	Floodplains
						Riverwash	5	Yes	Channels
170	Vina loam, 0 to 2 percent slopes, frequently flooded	Vina	80	Yes	Flood plains/ toeslope	Tujunga	10	Yes	Floodplains
						Moonbend	8	Yes	Floodplains
						Unamed	2	Yes	Channels
175	Tujunga loam, overwash, 0 to 2 percent slopes, frequently flooded	Tujunga	85	Yes	Flood plains/ toeslope	Riverwash	10	Yes	Channels
						Unamed	5	Yes	Channels
185	Riverwash	Riverwash	95	Yes	Channels/ toeslope	Tujunga	5	Yes	Floodplains

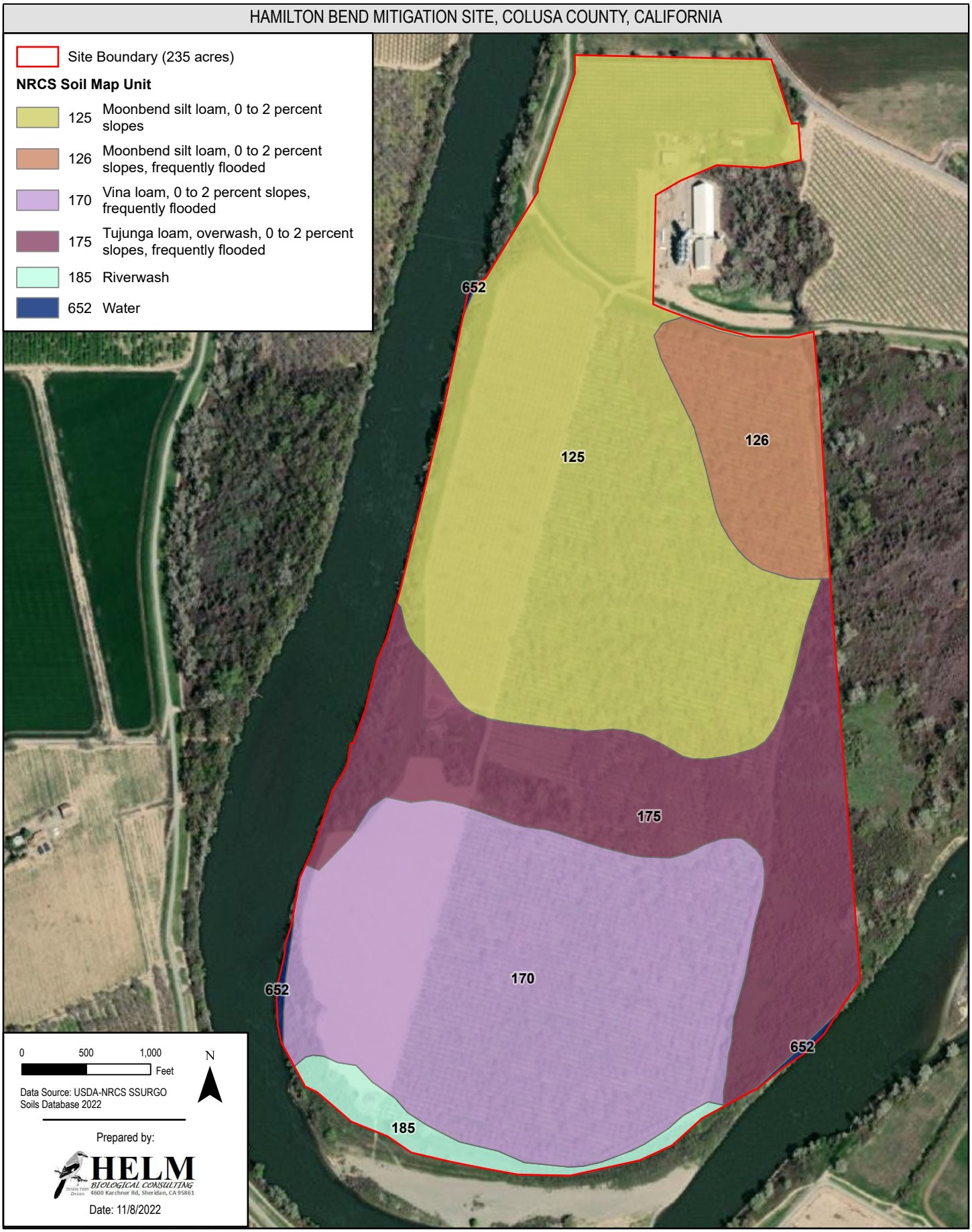

Figure 3. Soils

VEGETATION COMMUNITIES

The combination of the Site's climate, hydrology, soils, and disturbance regime supports four community/habitat types typical of this area within the Sacramento Valley Ecoregion:

- Agricultural Field
- Ruderal/Developed
- Riparian
- Annual Grassland (Figure 5)

A description of each of these community/habitat types including dominant vegetation and associated wildlife is provided below.

Agricultural Field. Most of the Site supports agricultural fields, with walnut orchards being the dominant type (Figure 4). These walnut orchards consist of English walnut trees (*Juglans regia*) (NL) grafted into the trunks of the hardier native California black walnut (*Juglans hindsii*) (FAC). The agricultural field located in the southern portion of the Site was mapped as fallow since the walnut trees had been uprooted but not removed and maintenance and irrigation had ceased.

The understory within the walnut orchard is sparse due to the herbicide applications and mechanical vegetation maintenance (e.g., mowing). This vegetation consists of weedy forbs and grasses associated with the ruderal and annual grassland habitats (described below) and with some species associated with the understory of the adjacent riparian habitat.

The herbaceous understory of the walnut orchards was dominated by non-hydrophytic agricultural weeds and a few weedy natives. The dominant herbaceous species present in declining order of abundance included Bermuda grass (*Cynodon dactylon*) (FACU), short podded mustard (*Hirschfeldia incana*) (NL), and Canada horseweed (*Erigeron canadensis*) (FACU). Less dominant species occurring included Johnson grass (*Sorghum halepense*) (FACU), prickly wild lettuce (*Lactuca serriola*) (FACU), and cheeseweed mallow (*Malva parviflora*) (UPL).

The walnut orchard acts as a transitional habitat for wildlife between the more densely wooded riparian habitat and the more open ruderal/developed habitats (described below). Wildlife observed in this habitat included California ground squirrel (*Otospermophilus beecheyi*), American robin (*Turdus migratorius*), American kestrel (*Falco sparverius*), American crow (*Corvus brachyrhynchos*), black phoebe (*Sayornis nigricans*), California scrub-jay (*Aphelocoma californica*), California towhee (*Pipilo crissalis*), northern flicker (*Colaptes auratus*), and northwestern fence lizard (*Sceloporus occidentalis occidentalis*).

Ruderal / Developed. Ruderal habitats are characterized by areas that are sparsely vegetated with weedy plant species that are adapted to routine human disturbances (i.e., herbicide spraying, disking, mowing, vehicular traffic, etc.). Ruderal habitat onsite generally occurs along the edges of or between agricultural fields, levees, elevated berms, and edges of roads (Figure 4). Developed

habitats onsite consist mainly of anthropogenic structures including buildings, dirt roads, irrigation pumps, electrical power and telephone poles and lines. Because these developed features were small in area and generally were surrounded by ruderal habitat, they were not mapped separately from ruderal, but included in Ruderal/Developed habitat.

The ruderal/developed habitat is routinely cleared of vegetation by herbicides and used by agricultural vehicles. The species composition within this habitat is dependent on the frequency and type of disturbance and adjoining habitat types but generally supported the following species: Bermuda grass (*Cynodon dactylon*) (FACU), field bindweed (*Convolvulus arvensis*) (NL), short podded mustard (*Hirschfeldia incana*) (NL), and Canada horseweed (*Erigeron canadensis*) (FACU). Less dominant species occurring included prickly wild lettuce (*Lactuca serriola*) (FACU), Johnson grass (*Sorghum halepense*) (FACU), and bull thistle (*Cirsium vulgare*) (FACU); and occasional few-seeded bitter-cress (*Cardamine oligosperma*) (FAC), and tall annual willow herb (*Epilobium brachycarpum*) (FAC) were present.

Wildlife associated with the ruderal habitat are generally those that have accepted the non-native and highly manipulated vegetation. These species are usually generalists that are tolerant of constant human disturbances including mowing, herbicide spraying, and foot and vehicle traffic. The buildings may be used by roosting bats, and black phoebe (*Sayornis nigricans*) and barn swallow (*Hirundo rustica*) will occasionally make nests under their eves. Passerine birds may utilize the protective cover for night roosts. Power poles and lines are often perched upon by various bird species. The house mouse (*Mus musculus*) and black rat (*Rattus rattus*) also probably forage in this habitat.

Wildlife species observed in this habitat include house cat (*Felis catus*), American crow (*Corvus brachyrhynchos*), barn swallow (*Hirundo rustica*), black phoebe (*Sayornis nigricans*), Brewer's blackbird (*Euphagus cyanocephalus*), European starling (S*turnus vulgaris*), house finch (*Carpodacus mexicanus*), house sparrow (*Passer domesticus*), mourning dove (*Zenaida macroura*), Eurasian collared-dove (*Streptopelia decaocto*), European starling (*Sturnus vulgaris*), California scrub-jay (*Aphelocoma californica*), and yellow-billed magpie (*Pica nuttalli*).

Riparian. Riparian habitats are those floodplain, bottomland, and streambank communities that occur along inland waterways. Riparian communities occur in transition zones between aquatic and upland communities, and in their undisturbed condition are characterized by dominant vegetation types that are tolerant of, and adapted to, relatively high soil moisture content. Riparian communities occur entirely within the 100-year floodplain of streams and rivers. However, most riparian plant species require flooding more frequently than once in every hundred years. Undisturbed riparian woodlands can be thought of having three somewhat distinct layers: overstory, midstory, and understory.

Riparian habitats associated with the Sacramento River levee onsite are routinely disturbed by herbicide application, levee stabilization, mechanical vegetation removal, and human disturbances (e.g., vehicular traffic, fishing trails) (Figure 4). As such, much of this habitat is missing one or

more of the distinct vegetative layers listed above. However, the largest riparian habitat occurring along the eastern edge of the site is less disturbed (Figure 4).

Riparian habitat onsite is characterized by a dominance of woody arborescent vegetation growing within or adjacent to the Sacramento River. With the exception of some of the deep rooting tree species, the vegetation generally was dependent on elevation and ranged from facultative wet and obligate species near the river's edge to facultative upland and upland species (associated with ruderal habitats) at higher elevations (top of levee). The elevations in between were dominated by a mix of hydrophytes and non-hydrophytes as described below.

Above the OHWM, this habitat was dominated by non hydrophytes and included an overstory of mature valley oaks (*Quercus lobata*) (FACU), with the occasional Fremont's cottonwood (*Populus fremontii* ssp. *fremontii*) (FAC), Northern California black walnut (*Juglans hindsii*) (FAC), and western sycamore (*Platanus racemosa*) (FAC); a midstory consisting of a vine layer of California grape (*Vitis californicus*) (FACU), Himalayan berry (*Rubus armeniacus*) (FAC), and California rose (*Rosa californica*) (FAC), and a shrub layer (listed in descending order of cover) of poison oak (*Toxicodendron diversilobum*) (FACU), blue elderberry (*Sambucus nigra* ssp. *caerulea*) (FACU,), coyote brush (*Baccharis pilularis* ssp. *consanguinea*) (NL), toyon (*Heteromeles arbutifolia*) (NL) and tree tobacco (*Nicotiana glauca*) (FAC). The herbaceous understory consisted of ripgut brome (*Bromus diandrus*) (FACU), yellow star-thistle (*Centaurea solstitialis*) (NL), and short podded mustard (*Hirschfeldia incana*) (NL); similar to the ruderal habitat with some natives including creeping wild rye (*Elymus triticoides*) (FAC) and California mugwort *(Artemisia douglasiana)* (FAC).

Below the OHWM was generally dominated by hydrophytes including an overstory of mature Fremont's cottonwood (*Populus fremontii* ssp. *fremontii*) (FAC) and Pacific willow (*Salix lasiandra*) (FACW) and the occasional mature western sycamore (*Platanus racemosa*) (FAC). The midstory was dominated by small trees including sandbar willow (*Salix exigua*) (FACW), boxelder (*Acer negundo*) (FACW), Oregon ash (*Fraxinus latifolia*) (FACW), and white alder (*Alnus rhombifolia*) (FACW) close to the water's edge, and buttonwillow (*Cephalanthus occidentalis*) (OBL) at the water's edge. Although the scrub layer was generally absent, the herbaceous layer was dominated by hydrophytes including California mugwort *(Artemisia douglasiana)* (FAC), Santa Barbara sedge (*Carex barbarae*) (FAC), cocklebur (*Xanthium strumarium*) (FAC), Dallis grass (*Paspalum dilatatum*) (FAC), sourclover (*Melilotus indicus*) (FACU), willowherbs (*Epilobium* ssp.), watergrass (*Echinochloa crus-galli*) (FACW), and streamside monkey flower (*Erythranthe guttata*) (OBL) along the river's edge.

The riparian habitats onsite are a valuable resource for wildlife, providing foraging, nesting, and roosting habitat for a variety of species. These habitats also provide an important movement corridor and connections with other waterways for Columbian black-tail deer (*Odocoileus hemionus columbianus*), gray fox (*Urocyon cinereoargenteus*), coyote (*Canis latrans*), and other wide-ranging animals. The acorn crops from valley oak trees (*Quercus lobata*) (FACU) are important food sources for a variety of birds and mammals. For some species, all of their life requirements

are met in this habitat. Many bird species nest in the woody vegetation within the riparian habitat and forage in the open annual grasslands and ruderal habitats.

Birds such as black phoebe (*Sayornis nigricans*), Pacific slope flycatcher (*Empidonax difficilis*), downy woodpecker (*Picoides pubescens*), western tanager (*Piranga ludoviciana*), and yellow-rumped warbler (*Dendroica coronata*) are all potential inhabitants of this streamside vegetation. The trees (willows, alders and oaks) of the riparian corridor could support nesting Cooper's hawk (*Accipiter cooperi*), red-shouldered hawk (*Buteo lineatus*), violet-green swallow (*Tachycineta thalassina*), Nuttall's woodpecker (*Picoides nuttallii*), California scrub jay (*Aphelocoma californica*), Bullock's oriole (*Icterus bullockii*), and many other birds. The numerous snags (dead and standing trees) provide foraging opportunities for wood peckers and their kin (Downy woodpecker [*Dryobates pubescens*], Nuttall's woodpecker [*Dryobates nuttallii*], Northern flicker [*Colaptes auratus*]), as well as cavity nests for western bluebird (*Sialia mexicana*), European starling (*Sturnus vulgaris*), and American kestrel (*Falco sparverius*). Turkey vulture (*Cathartes aura*) and other raptors (birds-of-prey) as well as a variety of other birds utilize these snags for perches.

The yellow-billed magpie (*Pica nuttalli),* American kestrel *(Falco sparverius)*, red-tailed hawk (*Buteo jamaicensis*), yellow warbler (*Dendroica petechia*), bushtit (*Psaltriparus minimus*), ruby-crowned kinglet (*Regulus calendula*), Nuttall's woodpecker (*Picoides nuttallii*), acorn woodpecker (*Melanerpes formicivorus*), California scrub jay (*Aphelocoma californica*), California towhee (*Pipilo crissalis*), house finch (*Carpodacus mexicanus*), mourning dove (*Zenaida macroura*), California quail (*Callipepla californica*), western gray squirrel (*Sciurus griseus*), deer mouse (*Peromyscus maniculatus*), Columbian black-tail deer (*Odocoileus hemionus columbianus*), and coyote (*Canis latrans*) are among the wildlife species that have been observed in this habitat. Columbian black-tail deer, California quail, and many other species take cover under the riparian canopy for shade, cool temperatures, and water.

The emerging insects from the adjacent Sacramento River provide forage for swallows (Tree swallow [*Tachycineta bicolor]*, violet-green swallow [*Tachycineta thalassina*], northern rough-winged swallow [*Stelgidopteryx serripennis*], barn swallow [*Hirundo rustica*], cliff swallow [*Petrochelidon pyrrhonota*]) and flycatchers (western kingbird [*Tyrannus verticalis*], ash-throated flycatcher [*Myiarchus cinerascens*], and black phoebe [*Sayornis nigricans*]) as well as bats. A variety of bird species forage at the edge of the river including shorebirds (e.g., killdeer [*Charadrius vociferus*] and greater yellowlegs [*Tringa melanoleuca*]) and various wading birds (great blue heron [*Ardea herodias*], great egret [*Ardea alba*]).

Pied-billed grebe (*Podilymbus podiceps*), double-crested cormorant (*Phalacrocorax auritus*), and belted kingfisher (*Megaceryle alcyon*) forage on small fish, and wood duck (*Aix sponsa*) and mallard (*Anas platyrhynchos)* forage through the algae for food items. North American river otter (*Lontra canadensis*) forage on fish and crayfish within the waters.

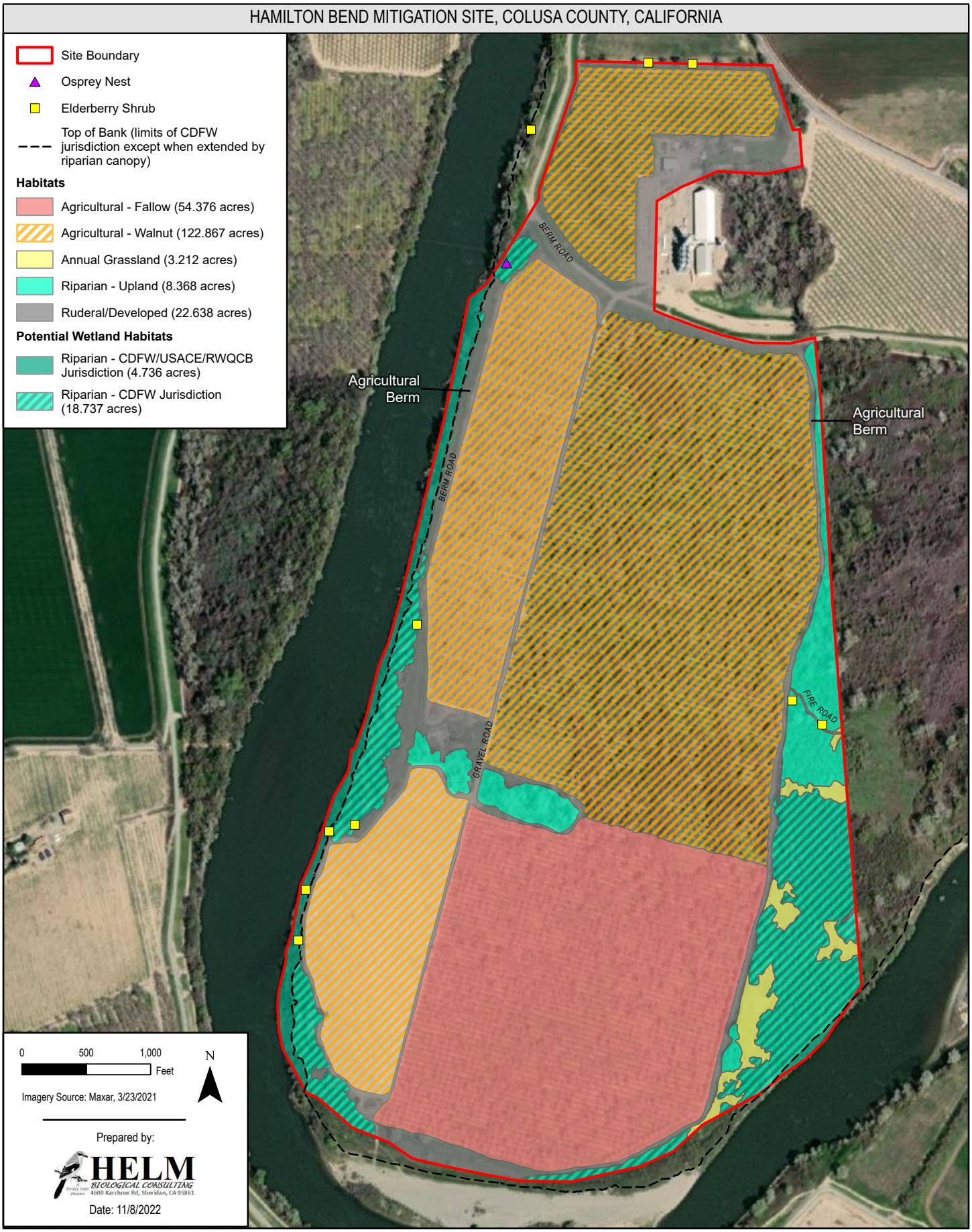

Figure 4. Biological Resource Occurrences, Including Potential USACE, CDFW, and RWQCB Jurisdictional Areas at the Hamilton Bend Mitigation Site, Colusa County, California

The impenetrable thickets of Himalayan berry (*Rubus armeniacus*) (FAC) and California rose (*Rosa californica*) (FAC) provides cover, forage, and nesting habitat for a variety of wildlife species. The berry and rose provide excellent escape cover for species such as black-tailed hare (*Lepus californicus*), California quail (*Callipepla californica*), white-crowned and golden-crowned sparrow (*Zonotrichia leucophrys and Z. atricapilla*), and hermit thrush (*Catharus guttatus*). California scrub jay (*Aphelocoma californica*), California quail (*Callipepla californica*), wrentit (*Chamaea fasciata*), and spotted towhee (*Pipilo maculatus*) typically nest in these thickets. Dusky-footed woodrat (*Neotoma fuscipes*), deer mice (*Peromyscus maniculatus*), and gray fox (*Urocyon cinereoargenteus*) may also reside here. The berries and rose hips are also important wildlife food sources. The wildlife value of the riparian habitat is enhanced by its proximity to the open water of the Sacramento River.

Annual Grassland. Grasslands are characterized by a relatively tree- or shrubless terrain, dominated by grass species. As the name implies, annual grassland habitats are dominated by non-native annual grasses. This habitat onsite occurred in open areas of the riparian habitat located in the southeast corner of the Site (Figure 4). This habitat is quite disturbed and probably resulted from the removal of riparian vegetation.

Annual grassland habitat onsite supported the following grass species in descending order of cover: ripgut brome (*Bromus diandrus*) (FACU), hare barley (*Hordeum murinum* ssp. *leporinum*) (FACU), Italian ryegrass (*Festuca perennis*) (FAC), foxtail grass (*Festuca myuros*) (FACU), soft chess (*Bromus hordeaceus*) (FACU), annual bluegrass (*Poa annua*) (FAC), slender oats (*Avena fatua*) (NL), and, and creeping wild rye (*Elymus triticoides*) (FAC).

Many forbs were present as well and dominated by yellow star-thistle (*Centaurea solstitialis*) (NL). Short podded mustard (*Hirschfeldia incana*) (NL), common fiddleneck *(Amsinckia intermedia*) (NL), wild lettuce (*Lactuca serriola*), red-stemmed filaree (*Erodium cicutarium*) (NL), and field bindweed (*Convolvulus arvensis*) (NL) were also present.

This mapped habitat type also includes isolated trees or groups of trees (usually valley oaks) with aerial canopy cover of less than 15 percent.

Annual grasslands provide breeding habitat for a variety of grassland birds. Among those observed during field surveys include western meadowlark (*Sturnella neglecta*) and lark sparrow (*Chondestes grammacus*). Annual grasslands also provide foraging habitat for many bird species that breed in adjacent habitats including American goldfinch (*Carduelis tristis*), red-tailed hawk (*Buteo jamaicensis*), American kestrel (*Falco sparverius*), and western kingbird (*Tyrannus verticalis*).

Annual grasslands provide important habitat for many mammal species, particularly small rodents and their larger predators. Mammals or their signs (i.e., scat, tracks, dens) observed in the annual grasslands onsite include black-tailed hare (*Lepus californicus*), California ground squirrel (*Spermophilus beechyi*), Botta's pocket gopher (*Thomomys bottae*), California deer mouse (*Peromyscus maniculatus*), California vole (*Microtis californicus*), raccoon (*Procyon lotor*),

striped skunk (*Mephitis mephitis*), Virginia opossum (*Didelphis marsupialis*), and coyote (*Canis latrans*).

The seeds and vegetative parts of grasses provide food for black-tailed jackrabbit (*Lepus californicus*), California vole (*Microtus californicus*), California deer mouse (*Peromyscus maniculatus*), Botta's pocket gopher (*Thomomys bottae*), western harvest mouse (*Reithrodontomys megalotis*), California ground squirrel (*Spermophilus beecheyi*), and other small mammals. These small mammals attract predators such as red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*Buteo lineatus*), and American kestrel (*Falco sparverius*).

Annual grasslands provide habitat for several reptiles, including gopher snake (*Pituophis melanoleucus*), valley gartersnake (*Thamnophis sirtalis fitchi*), Skilton's skink (*Plestiodon skitonianus skitonianus*), and northwestern fence lizard (*Sceloporus occidentalis occidentalis*). Northern Pacific rattlesnakes (*Crottalus oregonus oregonus*) probably occur in those areas within brush piles, fence rows, and rock piles**.**

Representative photographs of the habitats occurring onsite are provided in Appendix C.

SENSITIVE COMMUNITIES/HABITATS

POTENTIAL WATERS OF THE U.S. AND STATE, INCLUDING WETLANDS

In general, riparian habitats occurring onsite are considered sensitive habitats. The equivalent to riparian habitat onsite, would be Sawyer *et al.* (2009) *Quercus lobata* tree alliance (Valley oak woodland), which has a global and state rarity ranking of 3 (G3 and S3) and therefore is considered a sensitive natural community.

A total of 4.736 acres of riparian habitat was identified onsite as potential waters of the US and State based on the presence of an OHWM and could be under USACE, CDFW, and RWQCB jurisdiction (Figure 4). An additional 18.737 acres of riparian habitat is potential under CDFW jurisdiction based on top of bank and canopy of riparian vegetation (Figure 4).

Riparian habitats occurring along the waterside of the Sacramento River below the OHWM would be subject to regulation under Section 404 of the CWA. There was no attempt to separate wetlands form other waters below the OHWM. Riparian habitats above the OHWM would not likely be subject to Section 404 jurisdiction since they lacked hydrophytes - one of the three indicators (hydrophytes, wetland hydrology, and hydric soils) qualifying as "wetland".

Development, including restoration activities requiring the discharge of dredge or fill into jurisdictional waters of the US or State, wetlands are subject to CWA permit provisions. Similarly,

activities, including restoration within the riparian habitat above the OHWM may require a SAA from CDFW.

SPECIAL-STATUS SPECIES HABITAT ASSESSMENT

A CNDDB records search revealed occurrences of 22 special-status species that are known to occur within a 5-mile radius of the Site, of which only three (3) are known to occur onsite (Figure 5, Tables A and B in Appendix A) and are described below under appropriate plant and wildlife headers.

SPECIAL-STATUS PLANTS

The search of the CNNDB and CNPS On-line Inventory of Rare and Endangered Plants revealed that there are a total of six (5) special-status plants that are known to occur within a 5-mile radius of the Project (Figure 5). Sanford's arrowhead (*Sagittaria sanfordii*) was added to the list based on the habitats known to occur onsite. Of these six (6) special-status plants; none are known to occur onsite; two (2) have the potential to occur onsite; four (4) were not considered to have potential to occur onsite since they inhabit plant communities (i.e., marsh and swamps, or alkaline soils) pools) that are absent at the Site; and one is not probable based on habitat quality that occurs onsite (Table A in Appendix A).

SPECIAL-STATUS WILDLIFE

The search of the CNNDB records revealed that there is a total of 18 special-status wildlife species that are known to occur within a 5-mile radius of the Site (Figure 5). An additional 23 special-status species were added to the list of potential species that could occur onsite based on their presence just outside of the 5-mile radius or their association with habitats that occur onsite (Table B in Appendix A). Of these 41 special-status wildlife species; 12 species were not considered to have potential to occur onsite since they inhabit habitat communities (i.e., vernal pools) that are not present at the Site; nine (9) species are not probable to occur onsite; three species are known to occur onsite; and the remaining 17 species have the potential (low-high) to occur onsite (Table B in Appendix A).

WILDLIFE AND PLANT OBSERVATIONS

Tables B and C in Appendix B list the plants and wildlife species, respectively, observed onsite. See “Habitat Mapping” above for descriptions of plant species and wildlife occurring in each specific habitat type.

Legend

5-mile Buffer

Hamilton Bend Study Area

Hamilton Bend Study Area

Topo Map Boundaries

County Boundaries

CNDDB Occurrences

EO Symbology

Specific

Nonspecific

Circular

Sensitive EO's

Taxon Group

Plants

Birds

Fish

Invertebrates

Mammals

Reptiles

Plants
1 - *Brasenia schreberi* (watershield)
2 - *Chloropyron palmatum* (palmate-bracted bird's-beak)
3 - *Cuscuta obtusiflora var. glandulosa* (Peruvian dodder)
4 - *Hibiscus lasiocarpos var. occidentalis* (woolly rose-mallow)

Birds
5 - bald eagle (*Haliaeetus leucocephalus*)
6 - bank swallow (*Riparia riparia*)
7 - cackling (=Aleutian Canada) goose (*Branta hutchinsii leucopareia*)
8 - osprey (*Pandion haliaetus*)
9 - song sparrow ("Modesto" population) (*Melospiza melodia* pop. 1)
10 - Swainson's hawk (*Buteo swainsoni*)
11 - tricolored blackbird (*Agelaius tricolor*)
12 - western yellow-billed cuckoo (*Coccyzus americanus occidentalis*)

Fish
13 - green sturgeon - southern DPS (*Acipenser medirostris* pop. 1)
14 - longfin smelt (*Spirinchus thaleichthys*)
15 - steelhead - Central Valley DPS (*Oncorhynchus mykiss irideus* pop. 11)

Invertebrates
16 - Sacramento Valley tiger beetle (*Cicindela hirticollis abrupta*)
17 - valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)

Mammals
18 - hoary bat (*Lasiurus cinereus*)
19 - western red bat (*Lasiurus blossevillii*)
20 - western small-footed myotis (*Myotis ciliolabrum*)

Reptiles
21 - giant gartersnake (*Thamnophis gigas*)
22 - western pond turtle (*Emys marmorata*)

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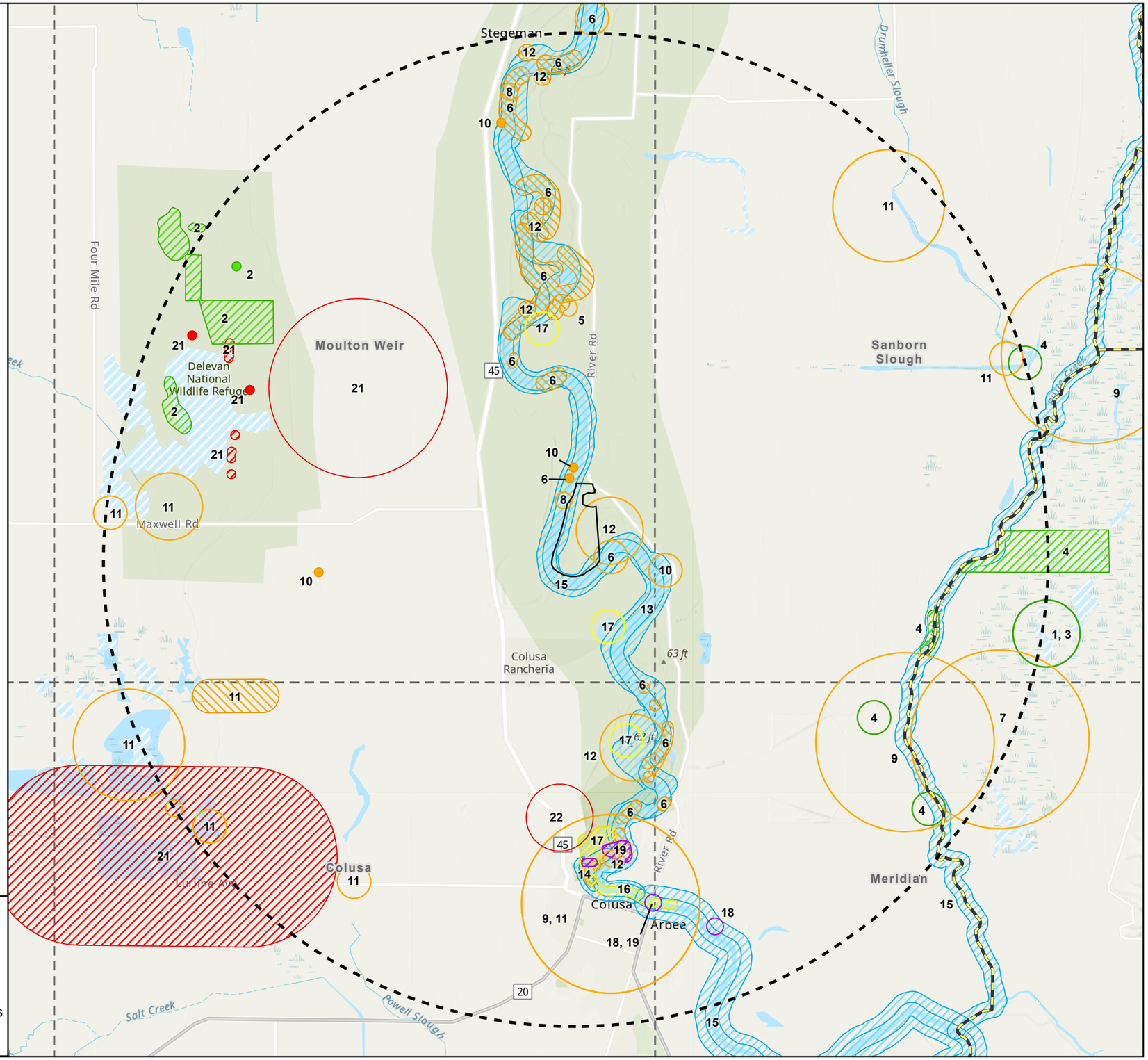
Figure 5. CNDDB Map

Hamilton Bend Mitigation Site
Colusa County, California

Source: CNDDB updated Oct 2022; CAL FIRE California County Boundaries; USGS TNM 2021; ESRI Light Grey Basemap

0 0.5 1 2 Miles



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APPENDIX A.
LISTS OF SPECIES SPECIAL-STATUS SPECIES
AND
THEIR POTENTIAL ONSITE

Table A. Special-Status Plant Species with Potential to Occur Within or in the Vicinity of the Hamilton Bend Mitigation Site, Colusa County, California

Common and Scientific Name	Plant Family	Lifeform	Blooming Period	Special-Status Listings and Ranks					General Habitat	Potential To Occur Onsite
				Fed List	State List	Global Rank	State Rank	Ca Rare Plant Rank		
Watershield (Brasenia schreberi)	Cabombaceae	perennial rhizomatous herb (aquatic)	Jun-Sep	-	-	G5	S3	2B.3	Freshwater marshes and swamps.	**None.** Suitable habitat for this species (marsh and swamps) does not occur onsite.
Parry's rough tarplant (Centromadia parryi ssp. rudis)	Asteraceae	annual herb	May-Oct	-	-	G3T3	S3	4.2	Valley and foothill grassland, vernal pools.	**Not Probable.** The habitat onsite is low quality (annual grassland derived from riparian vegetation removal).
Palmate-bracted bird's-beak (Chloropyron palmatum)	Orobanchaceae	annual herb (hemiparasitic)	May-Oct	FE	SE	G1	S1	1B.1	Chenopod scrub, valley and foothill grassland, alkaline soils.	**None.** Suitable habitat for this species (alkaline soils) does not occur onsite.
Sanford's arrowhead (Sagittaria sanfordii)	Alismataceae	perennial rhizomatous herb (emergent)	May-Oct(Nov)	-	-	G3T3	S3	1B.2	Freshwater marsh, shallow streams, ditches	**Low-Moderate.** Some habitat occurs along the Sacramento River.
Peruvian dodder (Cuscuta obtusiflora var. glandulosa)	Convolvulaceae	annual vine (parasitic)	Jul-Oct	-	-	G5T4?	SH	2B.2	Freshwater marshes and swamps.	**None.** Suitable habitat for this species (marsh and swamps) does not occur onsite.
Woolly rose-mallow (Hibiscus lasiocarpos var. occidentalis)	Malvaceae	perennial rhizomatous herb (emergent)	Jun-Sep	-	-	G5T3	S3	1B.2	Freshwater marshes and swamps. Often in riprap on sides of levees.	**Low-Moderate.** Some habitat (riprap) along the Sacramento River levee occurs onsite.

Definitions

Federal

FE = Federally Endangered (listed as Endangered under Federal Endangered Species Act [ESA])

State

SE = Listed as endangered under California Endangered Species Act (CESA)

ST = Listed as threatened under the CESA

Global Rank

G1 = Critically Imperiled — At very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors.

G2 = Imperiled — At high risk of extinction due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors.

G3 = Vulnerable — At moderate risk of extinction or elimination due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors.

G5 = Secure — Common; widespread and abundant.

GU = Unrankable — Currently unrankable due to a lack of information or due to substantially conflicting information about status or trends.

G#G# = Range Rank — A numeric range rank (e.g., G2G3) is used to indicate the range of uncertainty about the exact status of a taxon or community.

G#T# = Infraspecific Taxon — The status of infraspecific taxa (subspecies or varieties) are indicated by a "T-rank" following the species' Global Rank. Rules for assigning T-ranks follow the same principles as those for Global Ranks. However, a T-rank cannot imply the subspecies or variety is more abundant than the species. With the subspecies, the G-rank reflects the condition of the entire species, whereas the T-rank reflects the global situation of just the subspecies or variety.

? = Qualifier: Inexact Numeric Rank — A question mark represents a rank qualifier, denoting an inexact or uncertain numeric rank.

Q = Qualifier: Questionable Taxonomy — The distinctiveness of this entity as a taxon or community at the current level is questionable; resolution of this uncertainty may result in change from a species to a subspecies or hybrid, or inclusion of this taxon or type in another taxon or type, with the resulting taxon having a lower-priority (numerically higher) conservation status rank.

State Rank

S1 = Critically Imperiled — Critically imperiled in the state because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the state.

S2 = Imperiled — Imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state.

S3 = Vulnerable — Vulnerable in the state due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.

S#S# = Range Rank — A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community.

? = Qualifier: Inexact or Uncertain — A question mark represents a rank qualifier, denoting an inexact or uncertain numeric rank.

California Rare Plant Rank

Table A. Special-Status Plant Species with Potential to Occur Within or in the Vicinity of the Hamilton Bend Mitigation Site, Colusa County, California□

Common and Scientific Name	Plant Family	Lifeform	Blooming Period	Special-Status Listings and Ranks					General Habitat	Potential To Occur Onsite
				Fed List	State List	Global Rank	State Rank	Ca Rare Plant Rank		

1B.1 = Plants rare, threatened, or endangered in California and elsewhere; seriously threatened in California

1B.2 = Plants rare, threatened, or endangered in California and elsewhere; fairly threatened in California

2B.2 = Plants rare, threatened, or endangered in California, but more common elsewhere; fairly threatened in California

3.2 = Plants about which we need more information; fairly threatened in California

Table B. Special-Status Wildlife Species with Potential to Occur Within or in the Vicinity of the Hamilton Bend Mitigation Site, Colusa County, California

Common and Scientific Name	Special-Status Listings and Ranks						Range	General Habitat	Potential To Occur Onsite
	Comments	Fed List	State List	Global Rank	State Rank	Other Status			
Mammals									
Ringtail *(Bassariscus astutas)*		-	-	G5	S3S4	CDFW-FP	Sierra Nevada, Coast Ranges, and the Central Valley; upper and middle portions of the Sacramento River, Feather River, and Bobelaine Sanctuary.	Riparian forests, chaparral, brushlands, oak woodlands, and rocky hillsides.	**Not Probable.** Although suitable habitat exists on site, this species is very sensitive to human activities and therefore is unlikely to occur onsite.
Sacramento Valley red fox *(Vulpes vulpes patwin)*		-	-	G5T2	S2		Sacramento Valley. Occurring west of Sacramento River from Cottonwood to the Delta, and east of Sacramento River from Chico to Sacramento.	Den sites associated with valley grasslands, away from flooded agriculture, wetlands, or heavily urbanized areas.	**Low.** Only marginal habitat exists onsite for this species.
Hoary bat *(Lasiurus cinereus)*		-	-	G3G4	S4		Occurs statewide. Winters along coast and in southern California.	Roosts in dense foliage of medium to large trees. Prefers open habitat or habitat mosaics.	**Moderate.** Suitable habitat occurs onsite for this species.
Pallid bat *(Antrozous pallidus)*		-	-	G4	S3	BLM-Sensitive, CDFW-SSC, USFS-Sensitive	Low elevations throughout California.	Rocky outcrops, cliffs, and crevices for roosting; access to open habitats required for foraging.	**Low.** Suitable habitat is limited onsite**.**
Townsend's (=western) big-eared bat *(Corynorhinus townsendii)*		-	-	G4	S2	BLM-Sensitive, CDFW-SSC, USFS-Sensitive	Klamath Mountains, Cascades, Sierra Nevada, Central Valley, Transverse and Peninsular Ranges, Great Basin, and the Mojave and Sonora Deserts.	Mesic habitats; gleans insects from brush or trees and feeds along habitat edges.	**Moderate.** Suitable habitat occurs onsite for this species.
Western red bat *(Lasiurus blossevillii)*		-	-	G4	S3	CDFW-SSC	Occurring from Shasta Co. to the Mexican border, west of the Sierra Nevada/Cascade crest and deserts. The winter range includes western lowlands and coastal regions south of San Francisco Bay.	Roosts primarily in trees, 2-40 ft above ground, from sea level up through mixed conifer forests. Prefers habitat edges and mosaics with trees that are protected from above and open below with open areas for foraging.	**Moderate.** Suitable habitat occurs onsite for this species.
western small-footed myotis *(Myotis ciliolabrum)*		-	-	G5	S3	BLM-Sensitive	Year round resident in coastal California south of Contra Costa Co., Sierra Nevada, Great Basin, and desert.	Generally in arid or semiarid habitats. Roosts in rock crevices, caves, tunnels; hibernates in caves or abandoned mines.	**None.** Suitable habitat (caves, mines or tunnels) do not occur onsite.
Birds									
American bittern *(Botaurus lentiginosus)*		-	-	G5	S3S4		Distributed widely in winter mostly west of the Sierra Nevada. Occurs year round in Central Valley but is uncommon to rare in summer months.	Freshwater or saline emergent wetlands. Uses tall, dense emergent vegetation for cover, feeding, nesting.	**None.** Habitat for this species (emergent marsh) does not exist onsite.
Bald eagle *(Haliaeetus leucocephalus)*	Nesting and wintering	Delisted	SE	G5	S3	BLM-Sensitive, CDFW-FP, USFS-Sensitive	Permanent resident and uncommon winter migrant in the state. Breeds mostly in northern counties. More common at lower elevations.	Nests usually within 1 mile of water, in large, old-growth or dominant live trees with open branches.	**Not Probable.** Although habitat for species exists onsite, the proximity to current human disturbances (agricultural activities) would most likely preclude nesting.

Table B. Special-Status Wildlife Species with Potential to Occur Within or in the Vicinity of the Hamilton Bend Mitigation Site, Colusa County, California

Common and Scientific Name	Special-Status Listings and Ranks						Range	General Habitat	Potential To Occur Onsite
	Comments	Fed List	State List	Global Rank	State Rank	Other Status			
Bank swallow *(Riparia riparia)*	Nesting	-	ST	G5	S2	BLM-Sensitive	Summer migrant in riparian and lowland habitats, most commonly along Sacramento and Feather rivers in northern Central Valley. Also found along central coast and northeastern California, rarely wintering in Southern California.	Riparian scrub and woodland. Colonial nester. Requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, ocean to dig nesting hole.	**None.** Habitat for this species (vertical banks/cliffs) does not exist onsite.
Black-crowned night heron *(Nycticorax nycticorax)*	Nesting colony	-	-	G5	S4		Fairly common yearlong resident in lowlands and foothills through most of California.	Colonial nester, usually in trees. Rookery sites located adjacent to foraging areas such as lake margins or marshy areas.	**Not Probable.** No heron/egret rookeries currently occur onsite. Although habitat for species exists onsite, the proximity to current human disturbances (agricultural activities) would most likely preclude nesting.
Cackling (=Aleutian Canada) goose *(Branta hutchinsii leucopareia)*	Wintering	Delisted	-	G5T3	S3		Winters on lakes and inland prairies, mainly in Del Norte County, San Francisco Bay-Delta, and southern Central Valley.	Forages on pasture or cultivated fields. Roosts on open lakes or ponds.	**None.** Habitat for this species (e.g., cultivated fields) does not exist onsite.
California black rail *(Laterallus jamaicensis coturniculus)*		-	ST	G3T1	S1	BLM-Sensitive, CDFW-FP	Most (>90 percent) species are found in the tidal salt marshes of the northern San Francisco Bay region (primarily San Pablo and Suisun Bays). Smaller populations occur in San Francisco Bay, the Outer Coast of Marin County, freshwater marshes in the foothills of the Sierra Nevada, and in the Colorado River Area.	Inhabits freshwater marshes, wet meadows and shallow margins of saltwater marshes bordering larger bays. Needs water depths of about 1 inch that do not fluctuate during the year and dense vegetation for nesting habitat.	**None.** Habitat for this species (marsh habitat) does not exist onsite.
California horned Lark *(Eremophila alpestris actia)*		-	-	G5T4Q	S4	CDFW-Watch List	Widespread in suitable habitat throughout state.	Desert scrub, short grass plains, grasslands interrupted by bare ground, grassy hillsides, mesas and ridges, plowed agricultural land, sagebrush flats, alpine meadows and fell-fields, alkali flats.	**Not Probable.** Annual grassland is very limited on site for nesting and foraging habitat.
Cooper's hawk *(Accipiter cooperi)*	Nesting	-	-	G5	S4	CDFW-Watch List	Throughout California except high altitudes in the Sierra Nevada; winters in the Central Valley, southeastern desert regions, and plains east of the Cascade Range; permanent residents occupy the rest of the state.	Nests primarily in riparian forests dominated by deciduous species; also nests in densely canopied forests from foothill pine-oak woodland up to ponderosa pine; forages in open woodlands.	**Moderate-High.** Adequate nesting and foraging habitat exists onsite.
Great blue heron *(Ardea herodias)*	Nesting colony	-		G5	S4	CDF:S, IUCN-LC	Most commonly nests in the Central Valley, followed by coastal areas, and less commonly in the Great Basin, Cascade Ranges, Sierra Nevada, and southern deserts.	Colonial nester in tall trees, cliffsides, and sequestered spots on marshes. Rookery sites in close proximity to foraging areas: marshes, lake margins, tide-flats, rivers and streams, wet meadows.	**Not Probable.** No heron/egret rookeries currently occur onsite. Although habitat for species exists onsite, the proximity to current human disturbances (agricultural activities) would most likely preclude nesting.
Great egret *(Ardea alba)*	Nesting colony	-	-	G5	S4	CDF:S, IUCN-LC	Most commonly nests in the Central Valley, followed by coastal areas, and less commonly in the Great Basin, Cascade Ranges, Sierra Nevada, and southern deserts.	Colonial nester in large trees. Rookery sites located near marshes, tide-flats, irrigated pastures, and margins of rivers and lakes.	**Not Probable.** No heron/egret rookeries currently occur onsite. Although habitat for species exists onsite, the proximity to current human disturbances (agricultural activities) would most likely preclude nesting.

Table B. Special-Status Wildlife Species with Potential to Occur Within or in the Vicinity of the Hamilton Bend Mitigation Site, Colusa County, California

Common and Scientific Name	Special-Status Listings and Ranks						Range	General Habitat	Potential To Occur Onsite
	Comments	Fed List	State List	Global Rank	State Rank	Other Status			
Least Bell's vireo *(Vireo bellii pusillus)*	Nesting	FE	SE	G5T2	S2		Historically, common to locally abundant species in lowland riparian habitat, ranging from coastal southern California through the Sacramento and San Joaquin Valleys as far north as Red Bluff (Tehama County).Populations are now confined to eight counties south of Santa Barbara, with the majority of birds occurring in San Diego County. However, the species is expanding into its historic range.	Limited to willow dominated riparian habitats during breeding. Winter in a variety of habitats including mesquite scrub within arroyos, palm groves, and hedgerows bordering agricultural and residential areas.	**Not Probable**. Although adequate riparian habitat occurs onsite for nesting and the species is expanding north into its historical range, the species is currently confined to the southern portion of California.
Little willow flycatcher *(Empidonax traillii brewsteri)*	Nesting	-	SE	G5T3T4	S1S2		Summer range includes a narrow strip along the eastern Sierra Nevada from Shasta County to Kern County, another strip along the western Sierra Nevada from El Dorado County to Madera County; widespread in migration. Historically, It bred in California from Tulare County north along the western side of the Sierra Nevada, and in Oregon and Washington west of the Cascade range.	Riparian areas and large, wet meadows with abundant willows for breeding; usually found in riparian habitats during migration.	**Moderate.** Suitable nesting and foraging habitat occurs onsite.
Long-eared owl *(Asio otus)*	Nesting	-	-	G5	S3?	CDFW-SSC, USFWS-BCC	Uncommon yearlong resident throughout state, except Central Valley.	Requires riparian habitat with small, dense thickets of trees for roosting and nesting.	**Low.** Although suitable habitat exists onsite, the presence of the this species major predator, the Great horned owl, would likely preclude its occurrence.
Northern harrier *(Circus cyaneus)*	Nesting	-	-	G5	S3	CDFW-SSC, USFWS-BCC	Throughout California, concentrated in the Central Valley and coastal valleys.	Breeds in annual grasslands. Prefers marshes and grasslands for foraging and nesting. Uncommon breeder in northwest coastal areas.	**Low.** Annual grassland is limited on site for nesting and foraging habitat.
Osprey *(Pandion haliaetus)*	Nesting	-	-	G5	S4	CDFW-WL, CDF:S,	Breeds in northern California around inland lakes, reservoirs, and river systems. Migrates along coast and western slope of Sierra Nevada to Central and South America.	Nests high in large snags and open branched trees near large bodies of water. Forages over open, clear water for fish.	**Present.** This species is known to nest onsite.
Song Sparrow ("Modesto" population) *(Melospiza melodia* pop. 1)		-	-	G5T3?Q	S3?	CDFW-SSC	Sacramento Valley (particularly Butte Sink area), Sacramento-San Joaquin River Delta, and northern San Joaquin Valley.	Affinity for emergent freshwater marshes dominated by tules, cattails, and riparian willow thickets. Will nest in riparian forests of valley oaks with an understory of blackberry, along vegetated irrigation canals and levees.	**Low.** Only marginal habitat exists onsite for this species.
Swainson's hawk *(Buteo swainsoni)*	Nesting	-	ST	G5	S3	BLM-Sensitive	Lower Sacramento and San Joaquin Valleys, the Klamath Basin, and Butte Valley; the states highest nesting densities occur near Davis and Woodland, Yolo County.	Nests in oaks or cottonwoods in or near riparian habitats; forages in grasslands, irrigated pastures, and grain fields.	**Moderate-High.** Nesting habitat does occur onsite and agricultural fields for foraging do occur in the adjacent properties.

Table B. Special-Status Wildlife Species with Potential to Occur Within or in the Vicinity of the Hamilton Bend Mitigation Site, Colusa County, California

Common and Scientific Name	Special-Status Listings and Ranks						Range	General Habitat	Potential To Occur Onsite
	Comments	Fed List	State List	Global Rank	State Rank	Other Status			
Tricolored blackbird *(Agelaius tricolor)*	Nesting	-	ST	G1G2	S1S2	BLM-Sensitive, CDFW-SSC, USFWS-BCC	Largely endemic to California; permanent residents in the Central Valley from Butte County to Kern County; at scattered coastal locations from Marin County south to San Diego County; breeds at scattered locations in Lake, Sonoma, and Solano Counties; rare nester in Siskiyou, Modoc, and Lassen Counties.	Nests in dense colonies in emergent marsh vegetation, such as tules and cattails, or upland sites with blackberries, nettles, thistles, and grainfields; nesting habitat must be large enough to support 50 pairs; probably requires water at or near the nesting colony; requires large foraging areas, including marshes, pastures, agricultural wetlands, dairies, and feedlots, where insect prey is abundant.	**Not Probable.** Although marginal nesting habitat for species exists onsite (thin bands of Himalayan blackberry), the proximity to current human disturbances (agricultural activities) would most likely preclude nesting.
Western yellow-billed cuckoo *(Coccyzus americanus occidentalis)*	Nesting	FT	SE	G5T2T3	S1	BLM-Sensitive, USFS-Sensitive	The breeding range of the yellow-billed cuckoo formerly included most of North America from southern Canada to the Greater Antilles and northern Mexico. In recent years, the species' distribution in the west has contracted. The northern limit of breeding in the coastal states is now in Sacramento Valley (primarily breeding in riparian habitats along the Sacramento River from City of Colusa to City of Red Bluff). The species overwinters from Columbia and Venezuela, south to northern Argentina.	Riparian forest nester, along the broad, lower flood-bottoms of larger river systems. Nests in riparian jungles of willow, often mixed with cottonwoods, with lower story of blackberry, nettles, or wild grape.	**Moderate.** Nesting habitat does occur onsite and the species is known in the adjacent parcel; however, current human disturbances occurring in the largest riparian area may preclude nesting.
White-faced ibis *(Plegadis chihi)*	Nesting colony	-	-	G5	S3S4		Uncommon localized breeder and summer resident in California. Nests in scattered areas of San Joaquin Valley and Sacramento Valley. Generally winters in Gulf Coast and Mexico.	Forages in shallow, emergent freshwater wetlands such as wet meadows, pasture, and rice fields. Colonial nester in large emergent wetlands with islands of dense emergent vegetation.	**None.** Habitat for this species (e.g., marsh, pastures, rice fields) does not exist onsite.
White-tailed kite *(Elanus leucurus)*	Nesting	-	-	G5	S3S4	BLM-Sensitive CDFW-FP	Lowland areas west of Sierra Nevada from head of Sacramento Valley south, including coastal valleys and foothills to western San Diego County at the Mexico border.	Low foothills or valley areas with valley or live oaks, riparian areas, and marshes near open grasslands for foraging.	**Low.** Although nesting habitat is abundant onsite, foraging habitat is limited to the small annual grassland.
Yellow-breasted chat *(Icteria virens)*	Nesting	-	-	G5	S3	CDFW-SSC	Uncommon migrant in California; nests in a few locations with appropriate habitat, such as Sweetwater and Weber Creeks, El Dorado County; Pit River, Shasta County; Russian River, Sonoma County; Little Lake Valley, Mendocino County; and upper Putah Creek, Yolo County	Nests in dense riparian habitats dominated by willows, alders, Oregon ash, tall weeds, blackberry vines, and grapevines	**Low-moderate.** Habitat occurs onsite.
Yellow warbler *(Setophaga petechia)*	Nesting	-	-	G5	S3S4	CDFW-SSC	Nests from the Arctic Circle to Mexico. In California, nests throughout except the Central Valley, Southern Sierra Nevadas and the Mojave Desert.	Typically breeds in riparian or otherwise moist land with ample growth of small trees, in particular willows (Salix). Less preferred habitats are shrubland, farmlands and forest edges.	**None (Nesting).** This species does not breed in the Central Valley although it is a common migrant in riparian habitats.

Table B. Special-Status Wildlife Species with Potential to Occur Within or in the Vicinity of the Hamilton Bend Mitigation Site, Colusa County, California

Common and Scientific Name	Special-Status Listings and Ranks						Range	General Habitat	Potential To Occur Onsite
	Comments	Fed List	State List	Global Rank	State Rank	Other Status			
Reptiles									
Giant garter snake *(Thamnophis gigas)*		FT	ST	G2	S2		Historically, this snake ranged from Kern County north along the Central Valley to Butte County, with a gap in the central part of the valley. Currently, ranges from Glenn County to the southern edge of the San Francisco Bay Delta, and from Merced County to northern Fresno County, apparently no longer occurring from south of northern Fresno County.	Found primarily in marshes, sloughs, drainage canals, and irrigation ditches, especially around rice fields, and occasionally in slow-moving creeks. Prefers locations with vegetation close to the water for basking.	**None.** Suitable habitat (drainage canals, irrigation ditches, etc.) does not occur onsite.
Western pond turtle *(Emys marmorata)*		-	-	G3G4	S3	BLM-Sensitive, CDFW-SSC, USFS-Sensitive	In California, range extends from Oregon border of Del Norte and Siskiyou Counties south along coast to San Francisco Bay, inland through Sacramento Valley, and on the western slope of Sierra Nevada; range overlaps with that of southwestern pond turtle through the Delta and Central Valley to Tulare County.	Woodlands, grasslands, and open forests; occupies ponds, marshes, rivers, streams, and irrigation canals with muddy or rocky bottoms and with watercress, cattails, water lilies, or other aquatic vegetation.	**High.** Suitable foraging and basking habitat occur in the adjacent Sacramento River and nesting habitat (sandy soils) occurs onsite**.**
Fish									
Green sturgeon - southern DPS (*Acipenser medirostris* pop. 1)		FT	-	G2T1	S1	AFS-VU, IUCN-EN	Spawns in Sacramento, Feather, and Yuba Rivers, juveniles occupy Delta Estuary, and non-spawning adults live in marine or estuarine waters.	Prefers cool sections of mainstem rivers in deep pools for spawning, with small to medium sized sand, gravel, cobble, or boulder substrate.	**Present.** This species is known to occur in the adjacent Sacramento River.
Longfin smelt *(Spirinchus thaleichthys)*		FC	ST	G5	S1			Open waters of estuaries, in middle or bottom of water column. Prefers salinities of 15-30 ppt but can be found in freshwater or almost pure seawater.	**Low.** Although not preferred salinities, riverine habitat for species does occur in the adjacent Sacramento River .
Steelhead - Central Valley DPS *(Oncorhynchus mykiss irideus* pop. 11)		FT	-	G5T2Q	S2	AFS-TH	Occurring in the Sacramento and San Joaquin Rivers and their tributaries.		**Present.** This species is known to occur in the adjacent Sacramento River.
Invertebrates									
Monarch butterfly *(Danaus plexippus)*		FC	-	G4	S2	USFS-Sensitive, IUCN-EN	Across North America wherever suitable feeding, breeding, and overwintering habitat exists. The eastern and western populations are separated by the Rocky Mountains. Overwinter in central to south California coastal region and Mexico.	California overwintering habitat including eucalyptus, Monterey pines, and Monterey cypresses. Milkweed is the sole food source for larvae.	**None.** Habitat for this species (eucalyptus, Monterey pine, or Monterey cypress and milkweed plants) does not exist onsite.
Sacramento Valley tiger beetle *(Cicindela hirticollis abrupta)*		-	-	G5TH	SH		Sandy floodplain habitat in Sacramento Valley.	Fine to medium sand, terraced floodplains or low sandy flats at water's edge.	**Not Probable.** This species is presumed extinct.
Valley elderberry longhorn beetle (VELB, *Desmocerus californicus dimorphus)*		FT	-	G3T2	S3		Streamside habitats below 3,000 feet through the Central Valley of California.	Riparian and oak savanna habitats with elderberry shrubs; elderberries are host plant.	**High.** Suitable habitat (blue elderberry shrubs) occurs onsite. However, investigations for the presence of VELB exit holes was not conducted.

Table B. Special-Status Wildlife Species with Potential to Occur Within or in the Vicinity of the Hamilton Bend Mitigation Site, Colusa County, California

Common and Scientific Name	Special-Status Listings and Ranks						Range	General Habitat	Potential To Occur Onsite
	Comments	Fed List	State List	Global Rank	State Rank	Other Status			
Conservancy fairy shrimp *(Branchinecta conservatio)*		FE	-	G2	S2		Occurs in the Central Valley from Merced County north to Tehama County and one isolated population in Ventura County.	Occurs in large turbid vernal pools, or playa pools.	**None.** Suitable habitat (vernal pools or other seasonal wetlands) do not occur onsite.
Vernal pool fairy shrimp *(Branchinecta lynchi)*		FT	-	G3	S3		Endemic to the grasslands of the Central Valley, Central Coast mountains, and South Coast mountains	Inhabits small, clear-water sandstone depression pools and grassed swale, earth slump, or basalt-flow depression pools.	**None.** Suitable habitat (vernal pools or other seasonal wetlands) do not occur onsite.
Vernal pool tadpole shrimp *(Lepidurus packardi)*		FE	-	G4	S3S4		Endemic to the Central Valley.	Inhabits vernal pools and swales containing clear to highly turbid water.	**None.** Suitable habitat (vernal pools or other seasonal wetlands) do not occur onsite.

Definitions

Federal

FE = Federally Endangered (listed as Endangered under Federal Endangered Species Act [ESA])

FT = Threatened - listed (ESA) as likely to become endangered within the foreseeable future.

FC = Candidate for listing under ESA

State

SE = Endangered (listed under California Endangered Species Act[CESA])

ST = Threatened(CESA) - listed as likely to become endangered within the foreseeable future.

FP = Fully protected under the California Fish and Game Code

WL = Watch list - designated as a species in need of conservation help by California Department of Fish and Wildlife (CDFW)

SSC = Species of Special Concern - status for species with declining population levels, limited ranges and/or continuing threats that have made them vulnerable to extinction (CDFW)

** = Listed on Special Animals List by California Natural Diversity Database (CNDDB).

-- = no listing

APPENDIX B.
LISTS OF PLANTS AND WILDLIFE OBSERVED ONSITE

Appendix B. Vascular Plant Species Observed at the Hamilton Bend Mitigation Site (July 2022)

Plant Species Names		Wetland Indicator Status	Cal-IPC Rating	Habitats			
Scientific Name	Common Name			Agricultural Field	Ruderal/Developed	Annual Grassland	Riparian
Trees							
Acer negundo	Boxelder	FACW					X
*Ailanthus altissima**	Tree of heaven	FACU	M				X
Alnus rhombifolia	White alder	FACW					X
*Ficus carica**	Common fig	FACU	M				X
Fraxinus latifolia	Oregon ash	FACW					X
Juglans hindsii	Northern California black walnut	FAC		X			X
*Juglans regia**	English walnut	NL		X			X
Platanus racemosa	Western sycamore	FAC					X
Populus fremontii ssp. fremontii	Fremont cottonwood	FAC					X
Quercus lobata	Valley oak	FACU					X
Salix exigua	Sandbar willow	FACW					X
Salix lasiandra	Pacific willow	FACW					X
Shrubs							
Baccharis pilularis ssp. consanguinea	Coyote brush	NL					X
Cephalanthus occidentatlis	Button willow, Common buttonbrush	OBL					X
Heteromeles arbutifolia	Toyon						X
Nicotiana glauca	Tree tobacco	FAC	M		X	X	X
Salix exigua	Sandbar willow	FACW					X
Sambucus nigra ssp. *caerulea*	Blue elderberry	FACU					X
Toxicodendron diversilobum	Poison oak	FACU					X
Vines (Woody)							
Aristolochia californica	California pipe vine						X
Rosa californica	California rose	FAC					X
*Rubus armeniacus**	Himalayan berry	FAC	H				X
Rubus ursinus	California blackberry	FAC					X
Vitis californica	California wild grape	FACU					X
Grasses							
*Agrostis stolonifera**	Creeping bentgrass, Redtop	FACW	L				X
*Avena barbata**	Slender oats	NL	M		X	X	X
Bromus carinatus var. *carinatus*	California brome	NL					X
*Bromus diandrus**	Ripgut brome, Ripgut grass	NL	M			X	X
*Bromus hordeaceus**	Soft brome	FACU	L			X	
*Cynodon dactylon**	Bermuda grass	FACU	M	X	X		X
*Echinochloa crus-galli**	Watergrass	FACW					X
*Elymus caput-medusae**	Medusa-head grass	NL	H			X	
Elymus glaucus ssp. glaucus	Blue wild rye	FACU					X
Elymus triticoides	Creeping wild rye, Beardless wild rye	FAC				X	X

Appendix B. Vascular Plant Species Observed at the Hamilton Bend Mitigation Site (July 2022)

Plant Species Names		Wetland Indicator Status	Cal-IPC Rating	Habitats			
Scientific Name	Common Name			Agricultural Field	Ruderal/Developed	Annual Grassland	Riparian
*Festuca myuros**	Foxtail grass	FACU	M	X	X	X	
*Festuca perennis**	Italian ryegrass	FAC	M	X	X	X	
Hordeum murinum ssp. *leporinum**	Hare barley	FACU				X	
*Paspalum dilatatum**	Dallis grass	FAC					X
*Poa annua**	Annual bluegrass	FAC					X
*Polypogon monspeliensis**	Rabbitsfoot grass	FACW	L				X
*Sorghum halepense**	Johnsongrass	FACU		X			X
Grasslikes							
Carex barbarae	Santa Barbara sedge	FAC				X	X
Cyperus eragrostis	Tall flatsedge, Umbrella-sedge	FACW					X
Juncus balticus	Baltic rush	FACW					X
Herbs							
Amsinckia intermedia	Common fiddleneck	NL				X	
Apocynum cannabinum	Indianhemp dogbane	FAC					X
Artemisia douglasiana	California mugwort	FAC					X
Cardamine oligosperma	Few-seeded bitter-cress	FAC			X	X	
*Centaurea solstitialis**	Yellow star-thistle	NL	H	X	X	X	X
*Convolvulus arvensis**	Field bindweed	NL		X	X	X	
Datura wrightii	Jimsonweed	UPL				X	
Dittrichia graveolens	Stinkwort	NL	M		X		
Epilobium brachycarpum	Tall annual willow herb	FAC					X
Epilobium ciliatum	Slender willow herb	FACW					X
Erigeron canadensis	Canada horseweed	FACU		X	X		X
*Erodium cicutarium**	Red-stem filaree	NL	L	X	X	X	
Erythranthe guttata (*Mimulus guttatus*)	Streamside monkey flower	OBL					X
Galium aparine	Bedstraw	FACU					X
Heterotheca grandiflora	Telegraph weed	NL			X	X	X
*Hirschfeldia incana**	Short podded mustard	NL	M	X	X	X	X
*Kickxia elatine**	Sharp point fluellin	UPL			X		
*Lactuca serriola**	Prickly wild lettuce	FACU			X	X	
Lathyrus sp.	Pea						X
*Lysimachia arvensis**	Scarlet pimpernel	FAC				X	X
*Malva parviflora**	Cheeseweed mallow	NL			X		
*Melilotus indicus**	Sourclover	FACU					X
*Mollugo verticillata**	Green carpetweed	FACU			X		
*Phytolacca americana**	American pokeweed	FAC	L				X
*Rumex crispus**	Curly dock	FAC	L				X
*Silybum marianum**	Milk thistle	NL	L	X	X		
*Torilis arvensis**	Common hedge-parsley	NL	M				X

Appendix B. Vascular Plant Species Observed at the Hamilton Bend Mitigation Site (July 2022)

Plant Species Names		Wetland Indicator Status	Cal-IPC Rating	Habitats			
Scientific Name	Common Name			Agricultural Field	Ruderal/Developed	Annual Grassland	Riparian
*Tribulus terrestris**	Puncture vine		L	X	X	X	
Urtica dioica	Stinging nettle	FAC					X
*Verbascum thapsus**	Woolly mullein	FACU	L				X
Verbena lasiostachys	Western vervain	FAC					X
Xanthium strumarium	Cocklebur	FAC					X

* = non native , + = *observed just out side the Study Area.*

Appendix B. Wildlife Observed at the Hamilton Bend Mitigation Site (July 2022)

Common Name	Scientific Name
Salamanders, Toads, and Frogs (Amphibia)	
Sierran treefrog	*Pseudacris sierra*
Turtles, Lizards, and Snakes (Reptilia)	
Northwestern fence lizard	*Sceloporus occidentalis occidentalis*
Birds (Aves)	
American crow	*Corvus brachyrhynchos*
Acorn woodpecker	*Melanerpes formicivorus*
American goldfinch	*Carduelis tristis*
American kestrel	*Falco sparverius*
American robin	*Turdus migratorius*
Anna's hummingbird	*Calypte anna*
Ash-throated flycathcher	*Myiarchus cinerascens*
Belted kingfisher	*Megaceryle alcyon*
Black phoebe	*Sayornis nigricans*
Black-chinned hummingbird	*Archilochus alexandri*
Brewer's blackbird	*Euphagus cyanocephalus*
Bullock's oriole	*Icterus bullockii*
Bushtit	*Psaltriparus minimus*
California quail	*Callipepla california*
California scrub-jay	*Aphelocoma californica*
California towhee	*Pipilo crissalis*
Cliff swallow	*Petrochelidon pyrrhonota*
Common raven	*Corvus corax*
Copper's hawk*	*Accipiter cooperii*
Double-crested cormorant*	*Phalacrocorax auritus*
Downy woodpecker	*Picoides pubescens*
Eurasian collared-dove	*Streptopelia decaocto*
European starling	*Sturnus vulgaris*
Great blue heron	*Ardea herodias*
Great egret	*Ardea alba*
Great horned owl	*Bubo virginianus*
Greater yellowlegs	*Tringa melanoleuca*
House finch	*Carpodacus mexicanus*
House sparrow	*Passer domesticus*
House wren	*Troglodytes aedon*
Lark sparrow	*Chondestes grammacus*
Mallard*	*Anas platyrhynchos*
Mourning dove	*Zenaida macroura*
Northern flicker (Red-Shafted)	*Colaptes auratus*
Nuttall's woodpecker	*Dryobates nuttallii*
Osprey	*Pandion haliaetus*
Red-shouldered hawk*	*Buteo lineatus*

Appendix B. Wildlife Observed at the Hamilton Bend Mitigation Site (July 2022)

Common Name	Scientific Name
Red-tailed hawk	*Buteo jamaicensis*
Rock dove	*Columba livia*
Ruby-crowned kinglet	*Regulus calendula*
Spotted towhee	*Pipilo maculatus*
Tree swallow	*Tachycineta bicolor*
Turkey vulture*	*Cathartes aura*
Violet-green swallow	*Tachycineta thalassina*
Western kingbird	*Tyrannus verticalis*
Western meadowlark	*Sturnella neglecta*
Wood duck*	*Aix sponsa*
Yellow warbler	*Dendroica petechia*
Yellow-billed magpie	*Pica nuttalli*
Mammals (Mammalia)	
Black-tailed jackrabbit	*Lepus californicus*
Botta's pocket gopher**	*Thomomys bottae*
California ground squirrel	*Otospermophilus beecheyi*
California vole**	*Microtus californicus*
Columbian black-tail deer	*Odocoileus hemionus columbianus*
Coyote	*Canis latrans*
Deer mouse**	*Peromyscus maniculatus*
House cat	*Felis catus*
Raccoon**	*Procyon lotor*
North American river otter**	*Lontra canadensis*
Stripped skunk**	*Mephitis mephitis*
Virginia opossum**	*Didelphis virginiana*
Western gray squirrel	*Sciurus griseus*

* Observed flying over the Site

** Observed sign (e.g., scat, prints)

APPENDIX C.
REPRESENTATIVE PHOTOGRAPHS

Valley oaks within the riparian habitat located in the southern portion of the Site.

Understory of the riparian habitat located in the southern portion of the Site.

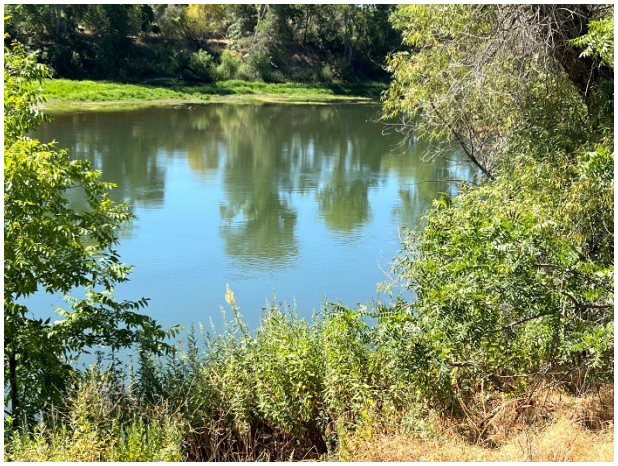
Riparian habitat located in the southern portion of the Site.

Riparian habitat located in the southern portion of the Site. Note the grass dominated herbaceous layer.

Riparian habitat located in the southern portion of the Site. Note the mid-story dominated by vine species.

Annual grassland habitat located in the southern portion of the Site. Note the infestation of yellow star thistle.

Annual grassland habitat located in the southern portion of the Site. Note the infestation of yellow star thistle.



Riparian habitat located along the Sacramento River.

Riparian habitat located along the water side of the Sacramento River levee along the western edge of the Site.

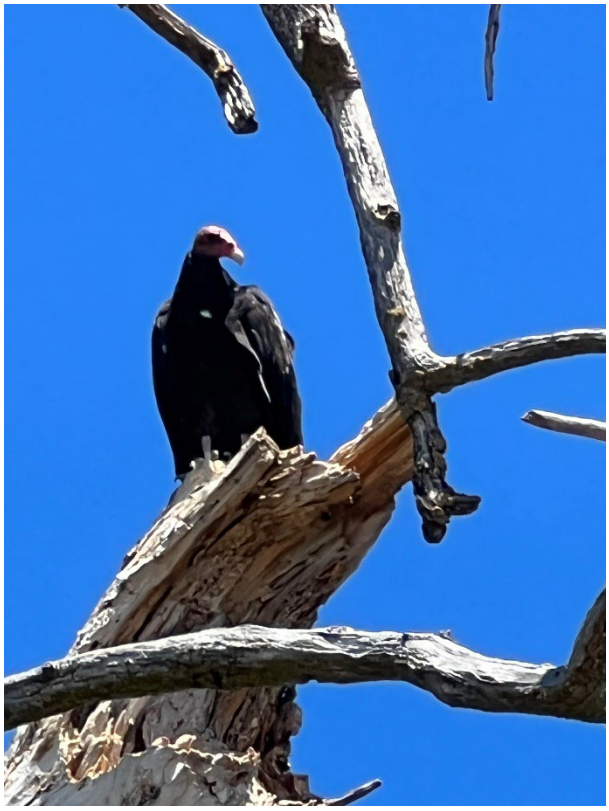
Riparian habitat located along the water side of the Sacramento River levee along the western edge of the Site.

Riparian habitat located along both sides of the Sacramento River levee along the western edge of the Site.

Riparian habitat located along both sides of the Sacramento River levee along the western edge of the Site.

Riparian habitat located along both sides of the Sacramento River levee along the northwestern edge of the Site. Note the fallow agriculture field in left background.

Riparian habitat located along the Sacramento River within the southwestern edge of the Site.



Turkey vulture perched in a snag located in the riparian habitat along the western edge of the Site.

Mature western sycamore within the riparian habitat located along the Sacramento River within the western edge of the Site.